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ORIGINAL LECTURES.

CLINICAL LECTURE

ON PREMATURE LABOR, AND THE MANAGEMENT OF WEAK AND IMMATURE INFANTS.

Translated for the *Medical Times* from advance sheets of the second volume of Professor Tarnier's new *Treatise on Obstetrics*,

BY THOMAS LINN, M.D.,

Paris.

WHEN gestation is interrupted in its usual course after the sixth month, it is called a premature labor. At present we will consider only that produced spontaneously or accidentally; artificially induced premature labor will be considered when we come to speak of obstetrical operations. The causes of premature labor, like those of abortion, are very numerous, and they need not be enumerated here. We will mention only a few of them: sexual intercourse especially is a frequent source of accidental labor; dropsy of the amnion, placenta prævia, eclampsia, also may produce labor before term much more often than abortion. In some women premature labor is a sort of habit. They are always confined before the normal term of gestation of living and healthy children, without anything being found to explain this anomaly. At times, however, there exists among them an evident hereditary predisposition, as was noticed by the old accoucheurs. De la Motte reports the case of a lady who was confined twice at seven months, and her two daughters afterwards did the same. Repetition of premature labor may also be caused by the death of the fœtus, as we have before remarked.

The diagnosis of premature labor does not present any difficulty, as its phenomena are the same as those of regular labor at term, and the delivery and after-treatment do not require special discussion. Sometimes premature labor is a happy event, in that it terminates a gestation complicated with serious accidents that have imperilled the health of the mother. In such a case it is plain that we should do nothing to prevent this favorable solution of the disorder. In cases that present themselves ordinarily, as soon as the symptoms of

premature labor appear we should act as if it were an abortion, and endeavor to prevent the progress of the labor as long as the membranes are intact and the infant lives. We may use the usual means to prevent it, such as complete repose, injections of laudanum and chloral, hypodermic injections of morphine, etc. We may add that Laferla and Cazzani report that they have obtained good results by the use of asafoetida in cases of habitual premature labor. It is to be given as follows:

R Pulv. asafoetidæ, 6 gram.;

Syrup., 6 gram. M.

Ft. pilulæ no. lx.

Sig.—One to be taken three times a day.

However, often we cannot succeed in stopping the premature expulsion of the fœtus, and the children are then born in a state of feebleness which requires particular care. This congenital weakness is readily recognized by certain characters: one of the most important is the inferiority of weight in such children as compared with those born at full term. At the end of the ninth month of intra-uterine life the product of conception weighs from three thousand to three thousand five hundred grammes (about seven pounds), but if it is born before this period it will weigh less proportionately. A development of between eleven hundred and two thousand five hundred grammes may be called congenital feebleness. But one must base the appreciation of vitality of newly-born children not alone upon their weight, for some of them present a fair weight, but their organs are imperfectly developed. They breathe and eat poorly. Other children remaining longer in the uterine cavity may have only the same weight, and yet be fully developed, and they can breathe and digest better. The knowledge of the age of infants born before term is therefore of great value, and we should always endeavor to fix it with the greatest care. "The infant affected by congenital weakness," says Guéniot, "has certain external characters which will scarcely deceive an experienced eye, and which enable the diagnosis to be made even before having the child weighed. In such infants the organs are ill formed and the functions incomplete; the entire body is thin; the skin is soft and delicate and of a uniform bright-red color, and its transparency sometimes permits us to see the blood-

vessels that course underneath. The infant's cry is not vigorous: ordinarily it is sharp and monotonous, like the cry of the chick. The respiration is feeble and almost imperceptible. The thorax seems, so to speak, immobile, and does not present those alternations of rise and fall which are so manifest in the robust infant." The inertia of the external muscles is striking. "They hardly seem to contract, and the movements of the limbs are very rare and without vigor. The child, plunged in a sort of torpor, has not even strength enough to suck; the muscles of the mouth-walls and of the tongue and palate are apparently insufficient to cause suction, and deglutition itself is often slow,—a grave symptom, since the regular accomplishment of this physiological act alone renders life possible." A well-conducted hygienic treatment is the only means of combating this state, and it should consist in the use of heat and in a well-directed alimentation.

The action of the exterior air and variations of temperature are eminently dangerous for these little infants born before term, and they must therefore be kept in an atmosphere as warm and as equable as possible. Guéniot says "that the hand, when placed in contact with its hands, feet, or legs, and even its nose, should feel a sensation of heat equal to that of a warm bath." The newly-born child that suffers from congenital weakness must, in one word, be *penetrated with heat*, and it is only upon this condition that circulation, respiration, and all the great functions of life can go on in its frail organism.

The means which have long been employed to effect this purpose are the following. The members and body are enveloped in a coat of wadding under their clothing, and a fold of cotton is placed around the head. In the cradle, two or three bottles of hot water are placed beneath the blankets, which are renewed from time to time. In changing the child, it is held before a good wood fire. In certain cases they have been kept in a room heated to 25° C. (77° F.), but it can easily be understood how difficult this is in practice. Massage is also resorted to in order to increase their circulation, and their limbs are rubbed with warm oils during five minutes, which is to be repeated two or three times in the twenty-four hours. Warm baths, in which some

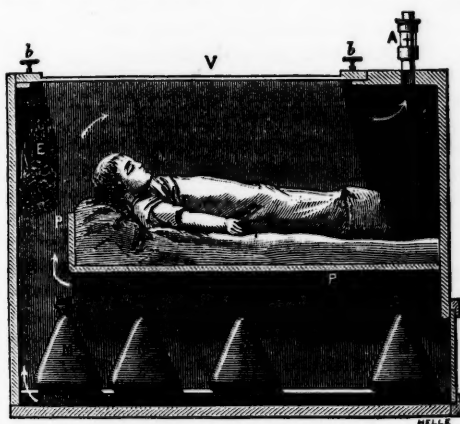
three quarts of wine is put, are used, and frictions with brandy, aromatic wine, lavender, etc., also have been resorted to.

In regard to the alimentation of infants born before term, the general rule is that the child is to be fed with its mother's milk or that of a wet-nurse direct from the breast. It should be well known to every one that a child may make suction-movements and yet not swallow in reality. To be sure that it has really been fed, it should be weighed both before and after nursing. If it does not swallow sufficiently, the milk is dropped into its mouth directly from the breast or given with a spoon; its meals should be given at least every two hours, and if possible every hour, *at least during the day*.

Such are the methods that have been in use for years until Tarnier's hatching-cradles were introduced, in which to maintain these infants in a constant temperature and in warm air. It was in 1857 that Professor Denucé, of Bordeaux, wrote as follows: "Having had occasion to give my care to an infant born about the sixth month of foetal life, I found myself in presence of two indications,—to feed the child, and to keep up its temperature. To fulfil the second one I had constructed a cradle made of zinc, with double sides and bottom. Imagine, for instance, two bathtubs, one smaller than the other, and one put within the other, leaving a space in which it was possible to put hot water: a funnel was placed at the top part, and a spigot at the bottom to draw off the water. To prevent loss of heat, the whole was wrapped round with flannel. Hot water was then put into the space between the cradles, and a thermometer gave the temperature and allowed us to keep up a regular degree of heat." In the case spoken of it was sufficient to draw off a pint of water and add as much hot water every six hours. Crédé in 1884 also published an account of a similar apparatus that he had used.

Finding these sorts of incubating-cradles insufficient, Professor Tarnier had constructed one resembling a very large hatching-machine, which was erected at the Maternity Hospital, Paris, in 1880. The temperature was maintained at 32° C., according to Tarnier's advice, and Dr. Budin had a Regnard's regulator adapted to it, with electric alarm-bell. We will not describe this machine, as it was large and

costly, but M. Tarnier has recently had made a small apparatus suitable for family use, which is very simple and easily managed; it can be made by any carpenter at very little expense. "It is a box made of wood, sixty-five centimetres long by fifty high and thirty-six wide, and the sides are twenty-five millimetres thick. The inside of the box is divided by a partial partition into two parts; this horizontal partition is placed about fifteen centimetres from the bottom of the box. The lower story is intended for some hot-water bottles, such as are called 'monks' in Paris." (They are simply earthen hot-water bottles, with a flat side, and the hole for the cork on one side.) The wood-cut shows the apparatus.



There are two doors: one is a sliding door on the side of the box, to push to either side for the purpose of introducing the hot-water bottles; the other is at one of the ends (at T in the figure); it does not completely close the orifice, but allows air to enter. The upper part, for the baby, contains its bedding, and is covered with a glass top at V; it should close as tightly as possible with two screws at b b. At A is an outlet for the air, to which a small ventilator can be attached. In the opening between the two chambers a wet sponge is placed to keep the air slightly humid, and a thermometer is also placed here to mark the temperature. The heating arrangement is the earthenware jugs at M; they are twenty centimetres long, and contain a pint of water; four or five of them are used to keep the temperature to 31° or 32°. It is heated to this degree

before putting the child in, and every one and a half to two hours one of the hot-water bottles is changed for a fresh one. The air passes in by the little trap at T, is heated by the bottles, and, passing by the sponge at E, escapes at A. The movement of the small ventilator at A will show that air passes.

The child should be put in swaddling-clothes, as it has been observed that the temperature is always two or three degrees higher under the clothes than it is in the hatching-machine. It should be from 32° to 33° in the apparatus. Every hour or two, according to the case, the infant should be taken out to feed and change it; but it should only be kept out the shortest time possible. The excellent action obtained by such cradles is shown by the results obtained at the Maternité in Paris. It should be added that infants who are attacked with sclerema, cedema, cyanosis, etc., also derive great benefit from being placed in the hot cradle, and often twenty-four hours will be enough to bring about a decided improvement. Cedema of newly-born infants disappears with surprising rapidity when they are placed in the machine for a short time. From 1877 to 1880, before it was used, one hundred and eighty-one infants died at the Maternité with sclerema; from 1882 to 1885, with the use of the hatching-machine, only nine died.

Since the incubating-cradle has been used, Winckel has advised the use of prolonged warm baths; but we fear it would be difficult to adopt this in practice.

The following table gives the statistics of the Maternité of the number of infants put into the couveuse:

Weight of Child.	No. of Infants.	No. who Lived.	No. who Died.	
1000 to 1500 grammes	40	12	28, or 70	per cent.
1501 to 2000 grammes	131	96	35, or 26.7	" "
2001 to 2500 grammes	102	101	11, or 9.8	" "

At the Maternité, before the introduction of the machine the infants died at the rate of sixty-six per cent.; since employing the heated cradle the average proportion is 36.6 per cent.

Crédé also obtained good results with his incubating-cradle; but his rate of mortality was much higher than Tarnier's. In the lowest weights he lost 83.3 per cent.; in the next, fifteen hundred to two thousand grammes, 36.5 per cent.; and, taking the

total, he lost 44.6 per cent., and some of his patients were over the weights given by Tarnier, who does not put the heavier children in the hatching-cradle.

Alimentation.—This is a question of the greatest importance in children who are born before term, and Professor Tarnier has adopted a method that we will describe in full. From the very first day an attempt must be made to put children to the breast, and if they are too feeble to suck, the milk may be squeezed into the mouth, or at first on a warm spoon and then given to the child. The mother's or nurse's milk, given pure without dilution or addition, is the best of all things for these infants; but if it cannot be had, then it may be replaced by asses' milk, *not boiled*, but mixed with warm sugared water in equal parts (three grammes of sugar to one hundred grammes of water). If asses' milk cannot be had, then cows' milk must be used for want of a better, and the mixture to be made is then one quart of cows' milk to three quarts of the sweetened water as above. The cows' milk is better boiled; and that boiled in a water-bath closed up is better than boiled in the open air. It is best of all prepared as follows: The mixture of milk and sugared water is put into what is called the "American pot" (which is an air-tight pot used to make beef-tea in); it is then put into boiling water for half an hour, and when taken out the contents should be turned out to prevent the liquid having a metallic taste. It is given to the child with a small spoon, and when the infant is very small six to eight grammes of liquid are enough for a meal, but this may be carried up to ten or fifteen grammes when the infant is larger. There should be at least twelve meals in the twenty-four hours.

"Gavage."—It will often happen that the child will drink badly and throw up half of the liquid given, and, the alimentation then being insufficient, it gets rapidly worse, diminishes in weight, and frequently has diarrhoea, and it is in these cases that Dr. Tarnier practises what he calls "gavage." The apparatus used is quite simple, being nothing more than a urethral sound of red rubber (No. 14 or 16 French according to Charrière). At the open end of the sound is attached a glass nipple, sold in the shops under the name of Dr. Boilly's glass nipple. (A small glass funnel would do.) With this it is

easy to use the forced feeding system called "gavage." The infant is placed on the knee, with its head slightly raised; the sound is made wet and introduced as far as the base of the tongue, and the infant by its instinctive attempts at deglutition will make it go on as far as the œsophagus. The sound must be then gently pushed down the œsophagus, and it will readily pass into the stomach. The milk or liquid is then poured into the glass funnel, and by its weight will soon find its way down, and will empty into the stomach. After a few seconds the sound must be taken out, and here is the great point of the system: *it must be taken out with a rapid motion at once*, for if it is withdrawn slowly the milk given will be thrown up after it. The number of meals thus to be given will vary with the age and strength of the infant. As a general rule, eight grammes of milk given every hour will be enough when the infant is small, to be increased as needed. As to the aliment to be used, it is the same as in the usual alimentation. Professor Tarnier gives the preference to mother's milk, which they can press into the glass funnel used. If failing, the other milks may be used as stated before.

When the "gavage" is too copious, a curious phenomenon is produced: the infant augments rapidly in weight and in volume, but it is due to an œdema of the whole body, and, as this will disappear with a more moderate alimentation, it can be explained as a hypernutrition. But if, instead of diminishing the quantity of food, it is maintained or increased, before long indigestion will set in, and the child may perish with gastritis and enteritis. This is the great danger, and success is only obtained by giving the milk in very small quantity and often repeated. When the "gavage" is well done and the milk is not vomited, the infant will digest it well. The fæces are yellow in color, and the child will increase in weight.

When the new-born child gets to be a little stronger, this mode of feeding can be alternated with nursing, and so on progressively until the "gavage" is given up entirely; but it should be resorted to at the least sign of digestive trouble. Even when the child is old enough to nurse, should it be at all weak, it is useful, outside of its regularly taking the breast, to practise "gavage" three or four times a day. This is what M. Tarnier calls *gavage*

de renfort, as it will keep up the strength of the child so that it can take the breast and digest well.

Notwithstanding that this method of gavage is still being studied, from the results at the Maternité and those of lying-in wards in the hospitals in Paris it can be said that it is clearly indicated when the infant is born before term, and even if it does not possess the sensation of hunger, or lacks the necessary strength to eat, it is just the same as with the adult: the food introduced artificially into the stomach of the new-born infant will be digested.*

Thanks to the employment of the two methods of "gavage" and the Tarnier hatching-machines for the last few years, infants were raised that had been only six months, or six months and a few days, carried in the uterus. So that at last the actual period of vitality has approached the legal period, which in French law is six months of intra-uterine life. So far very few six-months' children have been saved in France.

ORIGINAL COMMUNICATIONS.

ON PLACENTA PRÆVIA.

Read before the Oxford Medical Society

BY C. P. JACKSON, M.D.

BY placenta prævia is meant that condition of affairs where the placenta is attached to the lower segment of the uterus, covering either partially or completely the os uteri; or, it may be, only coming down to the edge of the cervix.

This accident of pregnancy was known as early as the time of Paré,—in the beginning of the sixteenth century. Guillemeau, Mauriceau, Deventer, Pugh, and others were all acquainted with the fact that the placenta was sometimes found at the os uteri; but they supposed that in these cases it had become detached and had fallen down from its normal situation. Paul Portal was the first who had any accurate knowledge of the subject and recognized the necessity of delivering by art. To him undoubtedly belongs the honor of the original discovery of this abnormal insertion. In his work, which appeared in

1685, he described six cases in which "the placenta presented, was in entire contact with the orifice of the womb, and was adherent throughout." After the time of Portal his discovery appears to have been lost, and the "great obstetrical lights of the eighteenth century" (as Thomas calls them) had to grope their way to the truth. Deventer was among the number who, having noticed that the placenta still adhered by one margin to some point of the periphery of the cervix, considered the adhesion to be only accidental, and merely caused by clotted blood. He was not far from the great discovery, however, when he said, this "sometimes glues the placenta so closely to the orifice that it might be mistaken for an excrescence of the part."

Giffard, Roederer, Smellie, and Levret, in the middle of the century, almost simultaneously rediscovered Portal's discovery. To Dr. Rigby, of Norwich, however, belongs the credit of clearly and fully elucidating the subject. From him we have received the term "unavoidable hemorrhage."

This accident, in common with most other ills to which human flesh is heir, has been ascribed to various causes by different observers. Tyler Smith supposed it to be due to the ovule not having been impregnated until it reached the lower part of the uterine cavity. This is the view that Dr. Penrose holds, or did hold a few years ago. As proof of this, I remember his bringing forward statistics of the Jewish people, who, if the theory were true, should furnish an unusually large proportion of such cases, on account of the restrictions of the Levitical law. This he proved to be a fact, I believe.

Cazeaux inclines to the opinion that the mucous membrane is less swollen and turgid than when impregnation occurs at the proper place, and therefore offers less obstruction to the descent of the ovum. Schroeder also says an abnormal smoothness of the uterine wall caused by a previous leucorrhœa may be the occasion of the accident. Age has been advanced as a probable cause of the mishap under consideration. In the statistics of two hundred and forty cases of placenta prævia collected from the physicians of the State of Indiana by Dr. Enoch W. King,† the

* Professor Tarnier has lately tried a mixture of asses' milk in equal parts with meat soup, but the experiment is too new yet to detail it. However, the results are encouraging when the child cannot digest and has diarrhœa.

† See Amer. Journal of Obstetrics, October, 1880.

ages of one hundred and fifty-seven only are given. These he has classified in five-year periods. From his table we find that the largest percentage of cases occurred in the five-year period from twenty-six to thirty; but nearly as large a proportion occurred in each of the periods from twenty-one to forty inclusive, amounting in all to about ninety-two per cent.

Now, if it be true, as has been stated, that about nine-tenths of all obstetric cases occur within this limit, we are justified, I think, in the conclusion that age has little influence in the causation of this troublesome complication of labor.

Another cause which is said to predispose to unavoidable hemorrhage is an abnormal size of the uterus. Hence the greater frequency after several pregnancies. Playfair inclines to this theory, but Dr. Harris, in editing the last American edition of Playfair's "System of Midwifery," says, "The belief in the greater frequency after several pregnancies is not well founded." And these are the grounds for his objection:

Dr. King reported one hundred and eighty-three instances where the pregnancy at which the placenta was prævia is stated. In the first pregnancy there were ten per cent. of cases; in the second, sixteen per cent.; in the third, sixteen per cent.; in the fourth, eleven per cent.; in the fifth, fourteen per cent.; in the sixth, ten per cent.; in the seventh, eight per cent.; in the eighth, five per cent.; and in the ninth, two per cent. This really begins to look as though Dr. Harris were right. But in Simpson's obstetrical works there is a table (cited by King) giving an approximation of the percentage of deliveries which occurs in each pregnancy. This estimate is thirty per cent. of deliveries for the first pregnancy; while we have seen from King's report that the cases of placenta prævia amount to only ten per cent. for the corresponding pregnancy. Following out the comparison of the two tables, we find that, though there is a gradual falling off in the percentage of placental presentations as the number of the pregnancy increases, there is a still greater diminution in the proportion of deliveries. Thus, it is not until we reach the third pregnancy that the percentage of abnormal placental insertions exceeds the proportion of deliveries, and then only by one

per cent.; while in the sixth pregnancy the cases of placenta prævia amount to ten per cent., the deliveries to only five per cent.; in the seventh pregnancy, placenta prævia eight per cent., deliveries three per cent., and so on; thus, in the language of Dr. King, "quite conclusively showing that placenta prævia *does more generally occur in women who have borne several children.*" So far at least as any practical results are concerned, we are as far from the truth of the matter as were those inquirers at the beginning of the sixteenth century, the simple fact remaining that once in five hundred or six hundred cases the placenta is grafted either partially or completely over the external orifice.

Although the previous placenta of necessity occupies its site from the first moment of its formation, it rarely gives rise to any appreciable symptoms before the last three months of utero-gestation. It is probable, however, that an abnormal insertion sometimes produces abortion in the earlier months of pregnancy without its site of attachment having been suspected. The first symptom which causes suspicion is the sudden occurrence of hemorrhage without any appreciable cause. The amount of blood lost varies considerably. The first hemorrhage may be slight, in some instances ceasing spontaneously, only to recur, however, after a varying interval,—it may be a few days or it may be weeks,—each successive hemorrhage being more profuse. Hemorrhage seldom occurs before the end of the sixth month, often not until the ninth, and it may not occur until labor has commenced. Flooding is very liable to make its appearance on what would have been a menstrual period, probably on account of the physiological congestion of the uterus at that time. Should the first loss not show itself until near full term, it may be so great as to put the patient in imminent peril of death before assistance can be procured. Indeed, when hemorrhage has once occurred the patient is never safe, for excessive losses may occur at any moment when professional aid is not at hand.

An increased flow of blood during the pains of labor has long been looked upon as a diagnostic mark by which to distinguish between unavoidable and accidental hemorrhage; but, according to Playfair, "this distinction is altogether fallacious."

Though the pains do to a certain extent augment the sanguineous flow by detaching fresh portions of placenta, yet the immediate effect of the contractions here, as in all other forms of uterine hemorrhage, is to constrict the lacerated vessels and so lessen the flow, the apparently increased flow being due to the forcing out of blood which has already escaped from the vessels. Once our suspicions have been aroused by unaccountable hemorrhage, a vaginal examination becomes imperative.

If the os be sufficiently open to admit the finger, as it usually will be on account of the relaxation caused by the depletion, we shall usually be able to make out some part of the presenting placenta, though, if the os be high and gestation not far advanced, it may be necessary to insert the whole hand into the vagina. If the implantation be central, we shall find the os covered with a boggy mass more dense and less friable than a coagulum, yet offering less resistance to the finger than a foetal presentation; in short, we shall find conditions presenting the digital eye of the explorer with a scene altogether characteristic of the accident under consideration. If the insertion be lateral, the bag of membranes, and above it the presenting head or other part of the foetus, will be found occupying a part of the circle of the os, the rest being covered by the placenta. The lower portion of the uterine ovoid may in some cases be found unusually thick, and, according to Gendrin, ballottement cannot be made out. Doubtful cases may be cleared up by finding the placental bruit over the lower uterine segment. Dr. Wallace has even gone so far as to propose vaginal auscultation by means of a curved wooden stethoscope.

The source of the hemorrhage has long been a moot point. Sir James V. Simpson maintained with much energy that the source was the detached portion of the placenta; that the blood flowed from the adherent into the detached portion, and escaped from the surface of the latter. Drs. Radford, Kinder Wood, and others held the same opinion, and on this supposition based their plan of complete separation of the placenta. That hemorrhage usually ceases on complete separation of the placenta is not doubted, but Simpson's explanation of it is contested by most modern writers, especially by Barnes, the

success of *his* modification of this plan clearly proving the fallacy of Simpson's theory. Furthermore, Dr. Mackenzie proved beyond doubt, by a series of experiments in which he partially separated the placenta in pregnant bitches, that the blood flowed from the uterine wall, principally from the large venous sinuses, the arrangement of which specially favors hemorrhage when torn across, and possibly to some extent from the uterine arteries, just as in post-partum hemorrhage after the placenta has been entirely detached.

The cause of the hemorrhage has also been the subject of much discussion and difference of opinion. The earlier observers of this accident ascribed it to separation of the placenta from expansion and retraction of the cervix during the latter months of gestation,—an instance of good logic from false data, the shortening of the cervix being only apparent, not real. The theory of Jacquemier (endorsed by Cazeaux) supposes a loss of relation between the cervix and the placenta. He maintains that during the first six months of pregnancy the superior portion of the uterus is more especially developed; that the placenta also attains its maximum of development in the same time. So, when attached in its usual situation, there is no loss of relation in the development of the organs. On the other hand, during the last three months of pregnancy the lower segment of the uterus is more especially developed, while the placenta remains nearly stationary; thus, when attached to the cervix, the cervix grows away from the placenta. Barnes's theory differs from this in that he supposes the loss of relation to be due to an excess of growth of the placenta itself over that of the cervix during the latter months, the objection to both these theories being that hemorrhage often does not take place until labor has begun.

Playfair says that uterine contractions are constantly occurring during the continuance of pregnancy; that there is reason to suppose that these do not affect the cervical as well as the fundal portion of the uterus; that in cases where the placenta is placed either partially or completely over the os, one or more of these contractions, stronger than usual, may produce laceration of the placental attachments in that neighborhood. While Matthews Duncan claims that the causes

of hemorrhage in placenta prævia are precisely the causes that give rise to the occasional hemorrhages when the placenta is normally placed; that before labor has actually commenced the losses are strictly accidental; and that it is only at full term that they can with propriety be called unavoidable.

In the onward march of medical science the faithful follower of Hippocrates should not be confused by the din of conflicting theories; but at every cross-roads and at each divergent path let his eye be fixed on that deft though silent guide, nature.

Let us see, then, what are the ways in which nature seeks to relieve the unhappy victims of this accident. Of the cases reported by King, nearly forty-eight per cent. were spontaneously premature, with a mortality to mothers of fifteen per cent.; while the mortality in his entire collection was twenty-two and a half per cent.

Now, if it be understood that these favorable results were obtained without the patient's having been from the beginning under the careful supervision of the medical attendant, and that in many instances nature was only aroused to action after the woman had been debilitated by repeated losses of life's fluid, it will the more clearly appear how strong is the indication to follow nature; and yet, so far as I can learn, the medical world at large has given little attention to this most important point. Let us take a view of the surroundings. Here we have an appalling calamity, the mortality from which is about as great as that from the capital operation of ovariectomy. Can there nothing be done to render our prognosis more favorable in these cases? What *has* been done in the centuries past? Says Dr. Robert Lee, in 1845, "The most distinguished practitioners, from the days of Ambroise Paré to the present time, have universally recommended and practised turning in placenta prævia." What was the result? Simpson published a table of three hundred and thirty-nine cases collected from the records of a dozen or more such eminent men as Mauriceau, Gifford, Smellie, Rigby, Ramsbotham, Lee, etc., in which the mortality was one hundred and thirty-one, or about one in three.

It is true that Lee accuses Simpson of "several great inaccuracies" in his table, and also of omitting to mention Portal's

eighteen cases (seventeen of which were delivered by turning) with only one death. But how shall we account for Portal's success? Was he, in the seventeenth century, so vastly superior in obstetric skill to all his followers down to the nineteenth century? or had he made some other discovery (lost to his successors) to which his success was due rather than to the mere operation of version? However the case may be, until within the last decade at least there have been no statistics, so far as I know, which could approach to his in benignity of results.

It is true that Simpson published (in the *London and Edinburgh Monthly Journal of Medical Science* for March, 1845) a collection of one hundred and forty-one cases in which the placenta was detached and expelled before the child, with a mortality to the mother of ten, or one in fourteen. This is a higher death-rate than that of Portal, but, compared with other statistics, it still makes a most excellent showing. It has this disadvantage, however: these were not consecutive cases occurring in the practice of one or more physicians, but they were collected from here and there through the whole field of obstetrical literature for the purpose of proving a pet theory, and the chief objection to their reception is that most if not all of these were cases in which there were strong expulsive efforts on the part of the mother, and nature was quite able to take care of herself without the intervention of art. Such statistics are not worthy of full credit; and the test of years has not realized the enthusiastic hopes of Sir James Simpson. The treatment of these cases, as laid down in the various obstetrical text-books, is something on this order: on the occurrence of hemorrhage, having made a diagnosis of placenta prævia, place the patient on a hard mattress in a cool, well-ventilated room; do not heat or overburden her with clothes; keep her absolutely at rest; administer cool, acidulated drinks, with acetate of lead and opium or gallic acid; apply cold cloths, or even ice, to the vulva, lower part of the abdomen, and thighs,—in short, temporize until labor be forced upon you, then plug the vagina while the os dilates, give ergot if you please, and as soon as practicable or safe rupture the membranes, detach the placenta, or deliver by turning or the forceps, according to your preconceived notions or the nature

of the case. What are the results of this mode of procedure? According to different authorities, one in every three, every four, or every five, mothers perishes, while more than one-half of the children are lost.

According to King's statistics, the mortality from all methods, taken as a whole, was twenty-two and a half per cent. The mortality from all cases treated by ergot was sixteen per cent.; by rupture of the membranes, eight per cent. (these were nearly all favorable cases); by complete detachment of placenta, eighteen per cent. (but here seventy-seven per cent. of children were lost; by tampon, twenty-five per cent.; by forceps, thirty per cent.; by version, twenty-three and a half per cent. Thus have all these measures been weighed and found wanting! Can the skill of man devise nothing that shall lessen the mortality of this fatal accident?

In 1837 Dr. Renton wrote, "Portal in 1672 knew as much on the subject of uterine hemorrhage occasioned by displacement of the placenta from the os uteri, and of the practice necessary for its suppression, as we do at the present time."

In 1837 this was true: in fact, it was less than the truth. In the light of our present knowledge, I ask, Did he not know more?

Hitherto I have only spoken of the treatment of placenta prævia when it is thrust upon the physician in all its horrors,—perhaps at full term, when the uterine sinuses are prepared to send forth a terrible deluge of blood; or, it may be, after the patient has been exsanguinated by small, though repeated, losses; after the well-meaning but ill-advised efforts of the physician have kept the poor victim in a darkened room for weeks or months (through some imaginary benefit that is to accrue to mother or child), until her vital powers have reached so low an ebb as to be unable to survive the shock of labor. But, thanks be to those lights of our profession who have not forgotten to look up to and follow in the footsteps of Mother Nature, a better state of things has begun to be inaugurated! Cure the wretched evils proceeding from this insidious enemy, when given full sway, we cannot; crush them in their incipency, in great measure, we may.

Induction of premature labor as a prophylaxis of placenta prævia was first introduced into practice by Dr. Robert

Greenhalgh, of London. In 1864 he read a paper ("Practical Remarks on the Treatment of Placenta Prævia") before the Obstetrical Society of London, in which he strongly advocated this mode of treatment.

Drs. Barnes, Hicks, Hewitt, Beatty, and Oldham all took part in the discussion which followed, and it would appear from their remarks that they were all more or less familiar with the practice he recommended, several of the gentlemen stating that the principle had been admitted by men of experience, but had not been laid down in the obstetrical text-books, while Dr. Beatty said there was not much difference between Greenhalgh's practice and the usual practice in Dublin. "And yet," says T. Gaillard Thomas, "I know of no work, essay, or text-book which gave this advice at any time previous to the appearance of Greenhalgh's paper." Let us see what are the results of this practice. The statistics are few, and therefore may be misleading, but so far as they go they are certainly very encouraging.

In an excellent paper on the subject (see *American Practitioner*, vol. xv.), Dr. Thomas reports eleven cases in which he induced labor by means of Barnes's dilators on the first occurrence of hemorrhage. He speaks of three of his patients as being primiparæ, of seven as multiparæ, and of one he speaks somewhat ambiguously as a young woman. Six children (an unusually good average) and all the mothers but one were saved. Case IX., a multipara, died on the fourth day after delivery, of septicæmia. Since this can hardly be looked upon as a direct effect of placenta prævia, I think we may regard this as a report of eleven consecutive cases without a single death.

From a careful study of the foregoing facts and figures I arrive at the following conclusions:

1. Having been summoned to attend a case of ante-partum hemorrhage, it is necessary to make a most thorough examination as to its cause.
2. Supposing the diagnosis of placenta prævia has been made, it is the duty of the physician to ascertain whether the child be viable: if not, the mother's physical condition warranting, and her domestic relations and pecuniary status not positively contra-indicating, temporize until the child arrive at the age of viability.

3. The child being viable, induce labor at once, and so protect the patient from the danger of sudden, exhausting, and, it may be, fatal hemorrhage. The induction of labor is best brought about by the use of hydrostatic dilators, preceded, if need be, by a sponge-tent.

The os being well dilated, complete labor by rupture of the membranes, version (using bimanual method if possible), the forceps, or separation of the placenta, according to existing conditions and the necessity for expedition.

OXFORD, CHESTER COUNTY, PENNSYLVANIA.

THE BACILLUS TUBERCULOSIS AND THE BUSY PRACTITIONER.

BY J. L. ELLIOTT, M.D.,

Bay City, Michigan.

EVER since the discovery of the bacillus tuberculosis by Koch there have been many who doubted whether any practical benefit would be derived from the discovery. But after five years' quite extensive experience with the bacillus and its relations to tuberculosis, the most advanced thought and highest authorities in the medical profession tell us that there is a definite relation between them. These authorities are widely at variance as to whether the bacilli are the cause or only an accompaniment of the disease. They are, however, pretty well agreed upon two points,—viz. :

1. That when the bacilli are present in the sputum they become positive evidence that such sputum comes from a tuberculous centre.

2. That their number, when present, is as index of the rapidity with which the disease is progressing.

It is to be regretted that there is any chance for disagreement upon the question, but that should not deter us from putting to practical use the settled points, leaving the other for future investigation to decide.

Now, if the doctrines as taught us are correct, every practitioner of medicine should be able to stain and recognize bacillus tuberculosis. The writer is satisfied, however, that altogether too few practising physicians make any use whatever of the microscope as an aid in the diagnosis and prognosis of tuberculous disease, and it is this very fact which has prompted the writing of this article. It has been for

some time apparent to workers in this field that the whole bacillus tuberculosis question stood in need of a practical turn,—that is, it should be shorn of so much technicality, and brought within the range of the every-day busy practitioner. For if the discovery of Koch is of practical importance to mankind, it can only be made manifest by practitioners of medicine acquiring a knowledge of the subject sufficient to enable them to make practical use of it.

Heretofore the methods of acquiring this knowledge have been accompanied by difficulties which professional microscopists do not seem to overcome. Physicians engaged in the practice of medicine who seek for information upon any topic pertaining to their profession must, in most cases, rely upon current medical literature. Now, we all know this country is flooded with the latter, of uniformly good quality too, yet the writer must confess that nearly every article on staining and identifying bacillus tuberculosis with which he is familiar has certain defects which must certainly limit its usefulness. There is too much technicality for physicians in general to follow understandingly. The illustrations usually represent the bacilli magnified eight hundred or twelve hundred diameters, which gives them an appearance altogether unlike that seen by the aid of the low powers. The staining process described is tedious, requiring two to twenty-four hours to execute. Nothing is said of the expense of equipping one's self for the work, or how to obtain chemicals of reliable quality. So that the process as usually described is so complex, tedious, and indefinite that no doubt many are discouraged at the outset, and many more, to his certain knowledge, fail to get any results at all when they attempt to execute the work as described. Some microscopists, who habituate themselves to the use of high powers, many accessories, etc., seem to entertain the belief that simpler methods will not give just as good results. For instance, Dr. Formad, an eminent pathologist and microscopist, in his series of articles on the bacillus tuberculosis question, says the following: "The second advantage resulting from the bacillus theory may be that physicians may become induced to make more use of the microscope in diagnosis; yet in this respect the general use of the microscope is hardly

practicable, on account of the thorough technique and experience required."*

The writer does not wish to criticise this class of teachers: with them scientific accuracy and its accompanying technique are second nature, and their work is very important to scientific medicine. It is unfortunate, however, for the profession that the subject is kept in such a complex state. The writer claims that the process may be so simplified that, with a little skill and very moderate outlay for apparatus, any physician can determine the presence or absence of bacillus tuberculosis in sputum, and that, too, in as short a time as fifteen or twenty minutes. This may be accomplished by observing the following details.

The Microscope and Accessories.—Any ordinary stand will do, as long as the fine adjustment works well; a high-power objective is not necessary at all. The writer has been surprised to find so many able workers with the microscope who claim that a high-power objective is indispensable. A friend who served a term in hospital, where he had every facility for such work, and thereby gained a large experience in staining bacilli, wrote after he began to practise medicine that he did nothing in the way of staining bacilli since leaving the hospital, because he had no high-power objective. For all practical purposes, a good one-quarter inch glass (Spencer's students' series, for instance) is all that is needed; a one-sixth inch is a little nicer, but it is not necessary. The writer has even been able to see the bacilli with a first-class Spencer's one-inch objective.

With his one-fourth inch objective he uses a one-inch ("C") eye-piece. Now, a great many physicians have a fairly good stand and the above-named glasses, and yet they do not stop to estimate whether they have the requisite power to identify bacillus tuberculosis.

Staining and Mounting.—There are quite a variety of methods: some comparatively simple, others quite tedious and complicated. The one best suited to the use of the physician is the one which is perfectly reliable, and at the same time quickly executed. The writer has tried many methods, but the one he is about to describe is the one which has proved to be most reliable.

The apparatus needed are a light pair of

forceps, a spirit-lamp (or Bunsen burner), a beaker glass (or tumbler), a watch-glass, bottle of glycerin, slides, and cover-glasses. Nearly every physician has these already on hand. The chemicals needed for staining are a saturated solution of aniline oil in water, a saturated solution of fuchsine in alcohol, a two-per-cent. solution of hydrochloric acid in alcohol. Now, few retail druggists will be apt to have the aniline oil and fuchsine in stock, but they may be ordered from Messrs. Lehn & Fink, importers, of New York, in a short time. It is very important to have these two chemicals of first-class quality, or else no results will be attained, and the writer feels thus in duty bound to mention the above-named firm on this account, knowing they would send out no inferior goods. The necessary quantities of the above-named solutions one would need to work with should not cost over seventy-five cents or one dollar, so that the whole outlay for working material is only a trifle.

The process is applied as follows. Try to obtain a thick portion of sputum which the patient has coughed up from the lungs. Spread a thin layer on a cover-glass and allow it to dry. Some difficulty may be encountered in spreading a thin layer of sputum evenly over the cover-glass; a little practice by the following method will give good results: place with forceps a small portion of thick sputum on the centre of the cover-glass; next press the cover-glass with the sputum against a glass slide; this will flatten the sputum out into a thin layer; now draw the cover-glass away from the slide, always keeping their surfaces parallel while doing so. Next pour a watch-glass nearly full of the aniline-oil solution, add to this from five to ten drops of the fuchsine solution; next lay the cover-glass, sputum side down, on the surface of the staining solution. Now hold the watch-glass containing the stain and cover-glass over the spirit-lamp and heat gently for three or four minutes; the degree of heat needed here is just sufficient to cause vapor to rise from the liquid. Remove the cover-glass from the stain. Wash away the excess of staining solution with water, then wash in the hydrochloric-acid solution until decolorized or nearly so; wash again in pure water, touch the edge of the cover-glass to blotting-paper to remove the excess of water, then lay upon blotting-paper and allow it to dry.

* Philadelphia Medical Times, vol. xiv. p. 337.

Place a drop of glycerin on the centre of a glass slide; heat it a little to remove any air-bubbles which may be present; place the prepared cover-glass carefully on the slide, and allow the glycerin to spread out and form a thin layer between slide and cover-glass. Right at this point a little patience and experience will be required sometimes, when it is desired to make a permanent mount, to get the exact amount of glycerin necessary to spread to the edge of the cover-glass, and no more. A little experience will soon enable one to estimate pretty accurately the size of drop required. Should too much be used, the excess can be removed from the edge of the cover-glass with strips of blotting-paper; should too little glycerin be used, a drop placed at the edge which lacks enough will flow under the cover-glass and meet the portion first used.

The slide is now ready for examination. If bacilli tuberculosis are present in the sputum stained, careful focussing will show them distinctly as dark-colored, curved, slender rods. When the bleaching process has been incomplete, so that the epithelial cells, pus-corpuscles, and debris of broken-down lung-tissue all retain the coloring-matter, the bacilli are still easily seen, being darker in color and more regular in outline.

One more point the writer wishes to call attention to. He has frequently failed to find any bacilli whatever after making several mounts; then, from the same lot of sputum, a portion from another part of the dish would be tried and the bacilli found in great numbers: so that before one can exclude their presence samples must be tried from all parts of the containing dish.

If it is desired to preserve the slide, a ring of zinc-white cement can be run on the edge of the cover-glass, and the mount will keep indefinitely.

[Dr. Elliott has kindly sent us a slide prepared in the manner described, which certainly leaves nothing to be desired: it could not be surpassed by any method.—*Ed. P. M. T.*]

CHRONIC CONSTIPATION.—The rational treatment of chronic constipation consists, according to Dr. J. K. Spender, in avoiding powerful purgatives, administering aloes and iron, and an occasional saline, with a liquid diet and exercise.—*The Practitioner.*

REPORT ON RECENT STUDIES ON DISEASES OF THE CIRCULATORY APPARATUS.

BY J. P. CROZER GRIFFITH, M.D.

THE PULSE.

BRADBENT, in the Croonian Lectures (*British Medical Journal*, 1877, 655, 707, 763), says the pulse is with propriety taken at the wrist because the circulation of the hand is not affected by disturbances of special function. The pulse is not produced by an expansion of the artery, as is so often taught, nor by an elongation of the vessel throwing it into curves. The real cause is a sudden change of the artery from a flaccid and somewhat flattened condition to a cylindrical shape. This is brought about by the increased pressure from ventricular contraction. Nor is it the case that the pulse indicates an onward flow of blood through the vessel, or that the strength of the pulse is proportionate to the rate of movement of the blood. It is simply a record of the minimum and maximum pressure, with the degree of difference between them.

There are three factors in the production of the pulse:

1. *The action of the heart.*
2. *The elasticity of the great vessels.*
3. *The resistance of the arterioles and capillaries.*

1st. The first of these determines absolutely the frequency and regularity of the pulse, except in cases where there are more heart-beats than appreciable pulse-waves. The strength of the pulse, too, will depend on the power of the systole combined with the volume of blood entering the aorta.

2d. The second factor converts the intermittent jet of blood into a more or less continuous stream. Dicrotism of the pulse is produced by the elasticity of the great vessels, especially when combined with low tension of the peripheral circulation and a sharp contraction of the heart. High arterial tension or inelasticity of the great vessels from degenerative changes is incompatible with the occurrence of dicrotism.

3d. The third factor possesses the greatest influence on the character of the pulse. Together with the force of the heart, it determines the *mean tension* in the arterial system, measured by the degree of resistance of the artery between the pulse-beats.

The higher this mean tension, the less the difference between the maximum and minimum tensions,—*i.e.*, the less marked is the pulse. And the converse of this is of course true.

The author then enters upon the consideration of the variable tension—the pulse. Although he admits the advantage of the sphygmograph in many instances, yet it is liable to so great irregularity in the tracings it produces that he confines himself chiefly to the consideration of the pulse as it is perceived by the finger. When there is but little resistance in the peripheral vessels, the pulse is sudden and sharp, and of short duration; while with high tension the pulse-wave rises gradually and is of longer duration. This prolongation of the pulse-wave must not be confounded with the fulness of the artery between the beats.

In a systematic examination of the pulse it is necessary to notice:

(1) The *number* of beats per minute, their *regularity* and *equality*.

(2) The *size* of the artery. This is very variable in different persons, the difference being either congenital or induced by physiological or pathological influences. A large artery communicates a more perceptible impulse to the fingers touching it lightly, and the beat is stronger; but the pulse-wave can be more easily stopped by pressure. In a small vessel the impulse may seem weak, but often grows stronger when compression is attempted.

(3) The degree of constant pressure,—*i.e.*, the *tension*. This is tested by trying to roll the artery under the fingers. In a pulse of average tension the vessel seems to stand out only during the actual beat, and subsides gradually, though it may generally be distinctly felt between the beats. If the tension is low, the vessel can scarcely be felt at all except just at the moment of the beat. In high tension, the artery can be plainly seen and rolled about under the fingers. Yet the pulsation in it is often scarcely perceptible except under firm pressure.

(4) The *character* of the pulse: whether its access is sudden or gradual, its duration short or long, and its subsidence abrupt or slow.

(5) The *strength* of the pulse. This is estimated by placing three fingers (as always) upon the artery, and with the one or two nearest the heart determining what

degree of pressure must be exerted to obliterate the pulsation felt by the other finger.

(6) *The state of the arterial walls*. This may be examined either by rolling the vessel or by carrying the skin along it longitudinally in search of inequalities, curves, calcareous patches, etc.

(7) *Dicrotism*; which is tested by allowing the fingers to rest with uniform, gentle pressure on the vessel. The physiological dicrotic wave will be felt like an echo of the principal one.

There seems to be no constant relation between differences in the circulation and the bodily or mental character, and even modifications of the circulation in disease are oftener the effects than the cause. It would be impossible to consider all the indications afforded by changes in the pulse. The author therefore confines himself to points regarding the pulse which illustrate either effects of circulatory derangements or advances in our knowledge from the investigations of recent years. He takes up—

I. Deviations from normal frequency and abnormalities of rhythm.

II. Variations of tension; their causes, consequences, and therapeutic indications; together with the *pulse of heart-disease*.

III. The pulse and cerebral affections.

I. DEVIATIONS FROM NORMAL FREQUENCY.

Increased pressure in the arterial system tends to slow the pulse-rate, and conversely. Yet nervous influence has a far more powerful influence. Almost all departures from the normal state of health are attended by increased pulse-rate. There are, however, cases in which increased frequency of the pulse constitutes itself the disease.

Persistent Frequency of the Pulse.—This condition is due to overstrain of the heart from continuous exertion. It is often called "irritable heart." With the rapid beating of the heart are associated breathlessness, nervousness, faintness, incapacity for exertion, and high arterial tension. The great remedy is rest in bed for one to three weeks. In middle life, a single act of excessive exertion may bring on persistent frequency of the pulse, associated with high tension and perhaps with irregularity.

Paroxysmal Palpitation.—This condition is most commonly a cause of suffering

and danger late in life. It may or may not be associated with heart-disease, and is at any rate rather a complication than a consequence of such disease. The exciting cause—such as indigestion, emotion, the act of taking food, change of position, etc.—acts by producing a sudden relaxation of the arteries, with a consequent diminution of the ordinary resistance, and, as a result, the heart then starts off in violent palpitation.

Another form of palpitation of extraordinary rapidity, and lasting for days or months, is due to some obscure neurotic influence. It may occur at any age, though more common after middle life. There is a tendency to venous stasis. The pulse is vibratory, and gives the impression of but little onward movement of the blood, showing either that the ventricle does not empty itself and is dilated, or that it remains dilated and does not fill in diastole. The latter is more probable, since the cardiac impulse is often very powerful. Sooner or later sudden death is the result. The author reports several very interesting cases.

Infrequent Pulse.—Pressure on the abdominal aorta or large arteries, renal disease with high arterial tension, jaundice, and some nervous affections have some effect in slowing the pulse, but the reduction is not striking. In some rare instances a real infrequency of the pulse (below forty per minute) is found coincident with perfect and vigorous health.

Very closely associated with the simple infrequent pulse is the *bigeminal pulse*. In this the pulse-waves and heart-beats are in couples: a strong beat being followed by a weaker one. Closely related to this is the condition of *dropped beat*, there being two beats of the heart to one of the pulse. Though so nearly allied, Broadbent has met with but one example, in the absence of valvular disease, in which any transition occurred. When, however, valvular disease, especially mitral stenosis, is present, the bigeminal pulse may be a transitional stage in the return from the dropped-beat condition to a normal action.

Treatment by digitalis in mitral stenosis is peculiarly liable to produce one or the other of these phenomena. Broadbent does not agree with Tripier that epilepsy, in the absence of mitral stenosis, is ever the cause of the dropped beat, but reports cases to prove that an infrequent pulse,

with or without abortive beats, may induce epileptic or syncopal attacks by slowing the circulation and producing cerebral anæmia.

The study of the heart-sounds in cases of dropped beat is most interesting, and would sometimes seem to prove that there was an alternating action of the ventricles. It is admitted that this phenomenon never occurs; but it is certain that in the dropped-beat condition the right heart contracts effectually in both beats, while the left heart succeeds in raising the aortic valves in the first beat only. It is evident that this extra action of the right ventricle may be most useful in mitral stenosis.

Intermittent and Irregular Pulse.—Occasional or habitual intermission of the pulse, associated with a hurried and imperfect beat of the heart, is perfectly compatible with health, but may be an indication of fatty degeneration of the heart. Brisk walking up and down in the room will usually remove the intermission in the first case, but make it worse in the second.

Marked irregularity of the pulse is oftenest seen in mitral regurgitation and in dilatation of the ventricles. That mitral insufficiency is the only one of all the valvular lesions in which it occurs is to be explained, the author thinks, on mechanical grounds: namely, by the varying pressure on the left auricle during respiration, combined with the incompetency of the valve. Any affection of the respiratory apparatus, as bronchitis or emphysema, increases the irregularity. Irregularity of pulse dependent on nervous influence is seen in dyspepsia and from the abuse of tobacco, but it may occur habitually without any discoverable cause.

(To be continued.)

TRANSLATIONS.

EXPERIMENTS UPON LOSS OF BODILY WEIGHT.—At a recent meeting of the Paris Biological Society, M. Ch. Richet showed tracings obtained by registering apparatus which show the loss of weight occurring in animals during a given time, independently of the ponderable excretions. M. Constantin Paul at a subsequent meeting described an apparatus which he had employed for weighing human beings at the Hôpital Lariboisière.

This apparatus, which is attached to a large weighing-machine constructed on the Quintenz system and capable of weighing a patient in bed, registers the variations of weight which occur. M. Redier, who superintended the clock-work section at the Paris Exhibition of 1878, constructed a most ingenious apparatus for this purpose. This apparatus is composed of two cylinders which are inserted into each other; one of these is attached to the weighing-machine, the other is attached to the registering apparatus. A double clock-work movement causes the inner cylinder to rise or fall according to the greater or lesser variation of weights placed on the weighing-machine, and maintains the weighing-machine in constant equilibrium.

At the same time the variations of weight are inscribed on paper lined in squares, and a clock-work action makes this paper turn so as to inscribe the movement of these variations and their duration. This apparatus thus registers in a continuous manner the weight of objects placed upon the tray of the weighing-machine. It may be employed for weights of sixty or seventy kilogrammes. The registration of these inscriptions is first made with determined weights or with variable weights. It may thus be determined whether the machine has registered correctly the weight of a burning candle or lamp, of a nosegay as it evaporates from it the water in which it is placed, etc. If a man who is in good health is placed upon the weighing-machine, it will be found that he loses about forty grammes an hour. The loss of weight in a convalescent is inconsiderable. But a patient who has become cachectic through phthisis, diabetes, cancer, organic disease of the heart, etc., loses much more in weight. In the case of a man in good health a remarkable fact has been observed,—viz., that at times he increases slightly in weight. M. Paul concludes that a healthy human being absorbs elements from the atmosphere, such as nitrogen or carbon, which he retains.

ELIMINATION OF CARBONIC OXIDE.—M. Zaleski, of Dorpat, has recently published the result of his researches concerning the elimination of oxide of carbon by animal organism. Oxide of carbon, introduced into the abdominal cavity, has not a sufficiently toxic effect to cause the

death of an animal. From the abdomen this oxide is absorbed by the blood, as when this gas is absorbed by direct respiration into the lungs.

When introduced into the abdominal cavity, its presence is detected in the products of respiration; the entire quantity absorbed may not be found, but a large proportion is observed. Blood which is saturated with oxide of carbon, injected into the abdominal cavity, is absorbed in the same way as normal blood.

Oxide of carbon which is contained in injected blood mixes with the blood of the vascular system, but in every case its combination with hæmoglobin cannot be proved. In the case of an injection in the abdominal cavity of blood saturated with oxide of carbon, it is impossible to meet with this oxide in the products of respiration by means of the chloride of palladium test.

WHOOING - COUGH.—Herff (*Deutsche Med. Zeitung*) found in his own person that there is slight degree of inflammation of the larynx in whooping-cough, and that the special spot of greatest hyperæsthesia was in the interarytenoid region. A Norwegian physician, Mohn, has found fumigations of burning sulphur to be of great service. The paroxysms are controlled by the use of cocaine internally (gr. v to xij daily), and by local applications to the throat, or even to the nasal mucous membrane.—*La France Médicale*.

COMPOUND WINE OF CREASOTE FOR PULMONARY DISORDERS.—The following is prescribed for incipient pulmonary tuberculosis where the temperature is not much above normal:

R Creasoti, 13 G.;
Tr. gentianæ, 30 G.;
Spt. vini, 250 G.;
Vini Xerici, q. s. ad fiat 1000 G.
M.

Sig.—Two or three tablespoonfuls to be taken during the day.—*Revue Générale de Clinique et de Thérapeutique*.

LOCAL REVULSIVE ACTION OF IODINE.—If a piece of absorbent cotton wet with tincture of iodine be held in contact with the skin, any desired amount of revulsive effect may be obtained, even to blistering or the formation of an eschar.—*La Normandie Médicale*.

PHILADELPHIA
MEDICAL TIMES.

PHILADELPHIA, JULY 9, 1887.

EDITORIAL.

THE DIAGNOSIS AND TREATMENT
OF CYSTS OF THE PANCREAS.

IT is scarcely more than half a decade since cysts of the pancreas began to excite the interest and attention of surgeons and gynæcologists. In fact, errors of diagnosis, by which enormous pancreatic cysts were mistaken for cysts of the ovary, first brought the former within the boundaries of surgical diagnosis and treatment. Prior to 1881 pathological anatomy had recorded no such growths. Rokitsky merely mentions cysts of the pancreas; Virchow describes instances in which the tumor had attained the size of the fist; Recklinghausen, Klebs, and Birch-Hirschfeld speak of cysts as large as a child's head. Nor did the clinical diagnosticians mention anywhere the fact that these growths may reach forward so as to constitute tumors of the abdomen recognizable by palpation, and even by inspection,—except Friedreich, who states that the tumor may sometimes be felt through the abdominal walls. It is then scarcely a matter of surprise that the enormous cysts described in the recent literature of the subject have led to errors of diagnosis.

Twelve cases—six occurring in men, six in women—have been recorded: one each by Rokitsky, Thiersch, Bozeman, Kulenkampff, Gussenbauer, Dixon, Riedel, Senn, Billroth, Hahn, Ahlfeld, and Küster. In nine of these the diagnosis was erroneous. The cases of Gussenbauer, Senn, and Küster were correctly diagnosed before operation, and terminated in complete recovery. The last of these observers* has, as a result of careful study of

the collected material, reached some important generalizations which place this subject, hitherto involved in deep obscurity, in a clear light.

Cysts of the pancreas are, as a rule, developed in the body or tail of the organ, very rarely in its head. Hence their influence upon digestion varies widely, and may be very trifling. They are usually single. In one instance only (Dixon) were there two, of which one occupied the head and body of the pancreas, the other the tail. Although cysts of this organ have been regarded as belonging to the group of retention-cysts, it is worthy of remark that in none of these cases has either a calculus or an anatomical lesion capable of mechanically obstructing the outflow of the secretion been discovered. The experimental researches of Senn make it highly probable that after such obstruction, as after ligation, the secreted fluid is absorbed, and that accumulation can result only when certain changes in the parenchyma have taken place. The contents of these enormous cysts are usually admixed with old or recent blood.

Their etiology is not clear. Traumatism, excesses in eating and drinking, inflammation of neighboring organs, and enteric fever have been regarded as causes. Doubtless these agencies all act in the same way in inducing interstitial inflammation or hemorrhage in the substance of the organ, thus leading to local contractions and degeneration. The development of the cysts is sometimes very rapid, more frequently it is slow.

Colic-like pains in the region of the stomach, *neuralgia cæliaca*, are usually present, and often very violent. These pains have been in some of the cases regarded as cardialgia or as hepatic colic. The pain is not only paroxysmal, it was also in certain cases periodical.

Increased flow of saliva, the so-called *salivatio pancreatica*, is neither common nor important. Vomiting, however, may

* Deutsche Medicinische Wochenschrift, 1887, Nos. 20 and 22.

occur, and is probably due to mechanical disturbance of the stomach. Diarrhoea is not frequent; nor are fatty stools (steatorrhoea) the rule,—a fact to be explained by the common situation of the cyst: namely, at the body or tail of the pancreas. A very striking symptom is the rapid emaciation. Küster's case lost over thirty pounds in four months. This symptom is probably due not so much to incomplete assimilation as to some disturbance of the coeliac plexus and solar ganglia, to which must also be ascribed the polyuria occasionally noted.

Whatever the symptom-complex, a diagnosis becomes possible only when the cyst has attained such dimensions as enable it to be recognized as a fluctuating tumor by the methods of physical diagnosis. Even when the tumor can be distinctly felt and seen in the epigastrium, the danger of mistaking it in either sex for other form of growth is exceeding great: in man for echinococcus of the liver, spleen, or mesentery, for a distended gall-bladder, or for aneurism of the aorta or its branches; in woman for any one of these, or for cystic disease of the pelvic organs, especially the ovary. Errors of this kind are the most likely when the tumor becomes large enough to reach into and distend all regions of the abdominal cavity. The rarity of cysts of the pancreas as compared with cysts of the ovary, the fact that the growth was first observed in the upper part of the abdomen, the results of bimanual examination in the female as determining the relations of the pelvic organs with the cyst, are important. Percussion affords very positive results. The distention of the stomach, for diagnostic purposes, with carbon dioxide causes it to pass with an increasing area of tympany in front of a pancreatic cyst, and without widening resonance behind an ovarian cyst. Fluid obtained by means of exploratory puncture with a hypodermic syringe is of diagnostic value. The contents of

pancreatic cysts—albuminous, usually containing blood and epithelial elements—bear no resemblance to the fluids found in other cysts except in certain forms of ovarian disease. The property of emulsifying fats is not in all cases retained. When present, it is of positive diagnostic significance.

The treatment consists in evacuating the contents of the cyst by means of laparotomy, and stitching the wall of the cyst to that of the abdomen. The resulting fistula has in the three successful cases gradually closed. Total extirpation of the cyst is, in view of the anatomical relations of the parts, an operation of wholly theoretical consideration.

THE TREATMENT OF WHOOPING-COUGH BY ANTIPYRINE.

THE recent report of Dr. Sonnenberger, of Worms, upon "The Pathogenesis and Therapy of Whooping-Cough"* acquires peculiar interest at the present time in view of the wide prevalence hereabout of this disease, much of which is of a degree of severity not common at this season of the year. Its treatment, which must be confessed to rank among the *opprobria* of medicine, is at present far from yielding satisfactory results, notwithstanding the efforts, often heroic, that have been made to conform it to the simplest requirements of the germ-theory of disease. In point of fact, certain of these efforts, such as the use of strong sprays of carbolic acid or other germicide substances, are wholly impracticable, and could not be attempted in private practice. The older modes of treatment, by narcotics, such as belladonna, opium, conium, chloral, etc., while of some value, are inadequate in the graver cases, and not wholly free from danger. Agents directed against the catarrhal symptoms

* Deutsche Medicinische Wochenschrift, No. 14, April 7, 1887.

are for the most part of little effect in any respect, and of none at all in controlling the nervous phenomena. Notwithstanding a list of remedies and plans of treatment of wearisome and discouraging length, there is a manifest disposition on the part of the profession towards pure expectancy in the mild cases and symptom-treating in the severe, that argues poorly for the results of accumulated experience.

Sonnenberg, after using antipyrine in seventy cases in two outbreaks, claims excellent results. Begun in the first stage, its action brought the attacks to a close, with mitigated symptoms,—the paroxysms, as a rule, not exceeding six or seven in twenty-four hours,—in from three to five weeks. When the treatment was not begun till a later period of the attack, the paroxysms were at once influenced for the better, the first sign of improvement being freer expectoration. This was speedily followed by general improvement, and increased ability to retain food. Collapse was in no instance induced. Complications occurred in five of the seventy cases: in two instances pneumonia, in three tuberculosis. Every attention was paid to general hygiene.

What the action of antipyrine may be cannot in the present state of knowledge be positively affirmed. Sonnenberger seems to incline to the view held by Binz and others,—that the effect of the members of the chinolin group within the organism is antiparasitic, as it is outside, and that we thus have an actual specific against whooping-cough in the true sense. To this must be added a very remarkable sedative influence in certain irritable states of the nervous system just beginning to be appreciated as among the properties of this extraordinary group of drugs. At all events, this application of antipyrine invites the fullest clinical investigation, and we shall welcome early and full accounts from those who are in the way of making such researches.

Antipyrine may be given to children in doses of from one-quarter of a grain to three or five grains, according to age; to adults in doses of ten or fifteen grains, three or four times a day. The preferable mode of administration is in the form of powder in sweetened water. It is not disagreeable to take, and in these doses has, as was shown by Petersen, no deleterious effects upon the digestion. It may be continued for several weeks without ill result.

NOTES FROM SPECIAL CORRESPONDENTS.

PARIS.

HYSTERICAL Hemianæsthesia and Toxic Hemianæsthesia was the title of a clinical lecture delivered at the Hospice de la Salpêtrière recently by Professor Charcot. He took advantage of the presence of two patients in the wards to discuss the following questions:

1. Is there a hemianæsthesia coming directly from lead-intoxication?
2. Is there an alcoholic hemianæsthesia which occurs as one of a series of nervous troubles belonging to chronic alcoholism?

He said that "some physicians answer both of these questions in the affirmative, but the study of a large number of cases leads me to think that it is not at all well established that such is the truth; not but what some patients do present themselves in whom saturnism and alcoholism are combined with a unilateral anæsthesia, but I cannot believe that they really form part of the pathology of these chronic forms of intoxication." Passing to the study of the cases, he gave the following history of them: "The first one is that of a man of 27, a house-painter by trade, who came in on the 15th of last June. His mother, he says, is subject to cramps in her legs very violent in character, and coming on every few days; her eyesight is also very bad. This may be tabes. One of his sisters had attacks of convulsive hysteria, in which she cries out, but does not bite her tongue. These symptoms, he tells us, went away after her marriage. The patient himself is a well-formed man; he is not a syphilitic nor an alcoholic subject; he has not had any serious illness, except typhoid fever ten years ago.

"He began working at his trade twelve years ago, and has continued at it ever since, without being troubled with lead-colic or any paralysis of the extensor muscles. Some eighteen months ago, however, he suddenly felt his legs give way beneath him, and something seemed to go upward from his abdomen to his stomach, at the same moment his belly

contracted, and he had a sensation of constriction in the neck. Calling out at this moment, he would have fallen if he had not been held up by one of his fellow-workmen; he remained for half an hour in an insensible state, and on coming to himself his left leg was without feeling in it. He presents, as you see, a high degree of saturnine discoloration of the skin, and the blue line on the gums is well marked; he is also very anæmic.

"For a month these attacks came on daily, the aura starting from the left leg. A treatment with bromides and iodides and sulphur-baths diminished considerably the attacks, but they still recur each fortnight. The left side is weaker than the right, and the left hand trembles most; there is also a left hemianæsthesia. With the right eye he can only distinguish the red colors, and the hearing and taste on the right side are almost abolished. The first idea that strikes you all is that the symptoms are due to attacks of lead-poisoning, but Grissolle showed that the subjects of saturnine epilepsy do not present the same symptoms that this man does. They never make an arc of a circle with their bodies (opisthotonos), nor do they retain a knowledge of the initial symptoms as he does. His face, also, does not take part in the convulsions. Again, when the lead-epileptic gives up his trade the attacks cease, but here after eighteen months they continue in our patient. What is the nature of his attacks, then? Do they depend upon some cerebral lesion? Those among you who have followed our studies regularly will see at once that this is a case of *hysteria only*, as he presents all the symptoms that characterize the hysterical aura: the sensation of constriction in the neck, the noise in the ears, and also that special attitude during the attacks that we call 'arc de cercle,' in which the body rests on the head and heels only. We can also apply an Esmarch's bandage to his arm and produce an artificial contraction of the muscles. It must be admitted now as proved that hysteria exists in man, after all the cases that have been presented; and indeed we can assert without fear of contradiction that it is not at all exceptional in man. I think that possibly saturnism may act a certain rôle in producing these nervous troubles in a patient predisposed to them. It certainly brings on attacks of gout as well as other diseases.

"The answer, then, I give to the first question is that a certain number of supposed saturnine hemianæsthesia cases come from hysteria; and that I am inclined to doubt the existence of pure saturnine hemianæsthesia, as I do also that supposed to be caused by alcoholism. The next case is a typical one to decide the last question.

"C., 33 years of age, has been under treatment here for a year past. His father is a violent man, and his mother has attacks in which 'she breaks everything.' A paternal uncle has

ataxia, and the patient himself had convulsions as an infant. At seventeen years of age he took to drink, rising at last to as much as five quarts of brandy in a week; this excess was followed by trembling of the hands, nightmare, etc. Two years ago he had his first convulsive attack, in which he fell from his bed, and which was followed by a right hemiplegia. Soon afterwards he had another convulsive attack, when his hemiplegia went away, but was followed by 'mutism.' Since then he has had frequent attacks, and the symptoms commence in an aura that starts from above the right hip. This is followed by constriction of the neck (globus hystericus), tonic convulsions, opisthotonos, and hallucinations. Muscular contractions can be provoked, and right hemianalgesia exists. This is also simply a case of pure hysteria, this time in an alcoholic subject. The nervous predisposition is present in a high degree: violent father, hysterical mother, he himself subject to convulsions as a child, etc. The alcoholism simply brought out the hysteria. The lesson is that this sort of attacks must not be attributed to a *toxic cause only*, and the answer to the two questions given at first is that the affirmative side is not at all proved in either of them."

Action of Rectal Injections of Carbonic Acid on the Respiration.—Professor (Agrége) Charles Richet (who will most likely take the place of the late Professor Béclard as Professor of Physiology) has been making a series of experiments on this subject. When carbonic acid gas is injected into the rectum and large intestine, whether the person be ill or not, he finds that the pulmonary exhalation will increase immediately after the injection, and it will rise from eight litres per hour (and per kilogramme) to ten litres. The proportion of carbonic acid gas exhaled by the lungs rises also according to the quantity of gas injected into the rectum. It results from these facts that: First, the presence of an excess of carbonic acid gas in the blood determines an excitation of the medulla oblongata, and that this reflex causes an acceleration of the respiratory movements; from which it seems to result that the carbonic acid gas is the true regulator of the act of respiration. Secondly, that this acceleration of respiratory movements brings about an elimination of carbonic acid gas in excess without changing the proportion of oxygen contained in the blood; in a word, without changing or making the slightest modification in the interstitial changes going on in the organism. Professor Brown-Séquard called attention to the fact, however, that there were two series of actions produced, according to the dose used: a small one would excite to action, and a very large one would produce inhibition. M. Richet said this was true, and stated that the elimination of the carbonic acid gas was not primitive, but consecutive to the acceleration of the pulmonary ventilation.

M. Bergeon, of Lyons, is at present in Paris, making some experiments with M. Richét, and he lately presented a phthisical patient to the Anatomical Society who after the treatment had passed a good winter in the cold climate of Geneva, Switzerland. It is, however, stated that when he ceases the injections the dry, crackling râles can be heard at the summit of the lungs. Some favorable cases are seen here of this treatment, and a good report of it has been heard from England, but it is not very much used in the Paris hospitals, and none of the principal professors are using it. The impression got about here, owing to some sensational cable despatches published in local newspapers in regard to this treatment being used in Philadelphia, *that America claimed the invention!* and one of the medical papers takes us severely to task about it. We, however, think that we were one of the first to describe the system as that of M. Bergeon's in our letters, and he got every credit for the invention in a letter published in these columns nearly a year ago.

Development of the Fetus and Induced Labor in Women having Deformed Pelves.—

Dr. Felice La Torre, a distinguished Italian obstetrician, has been making a study of the above question in Paris, and has just published the results in a large and very interesting work, in which he gives the statistics of all the accouchement services here, amounting to thousands of cases. He finds, in regard to the first part of the question, that a narrowed pelvis has no bad influence over the progress and proper development of the product of conception in women who have a deformed brim; the child will be as well formed as in any other normal pelvis. He next examines the effects of intervention in provoked labor before term, and gives the following table:

Before antiseptics was used:

Infants (mortality per 100). 42.85.
Mothers (mortality per 100). 26.53.

Since antiseptics has been introduced:

Infants (mortality per 100). 34.61.
Mothers (mortality per 100). 00.

In the second part of the work this author studies artificial premature confinement before the introduction of antiseptics and the "couveuse," and since, and he finds both the antiseptic precautions and Tarnier's hatching-cradles* have given splendid results.

He then compares the effects of the Cæsarean operation and early artificial labor, and gives the following results:

Cæsarean Operation.

Mothers cured . . . 66.6 per cent.
Mothers died . . . 33.3 per cent.
Infants born alive . . . 62.4 per cent.
Infants born dead . . . 37.6 per cent.

Early-provoked Labor.

Mothers cured . . . 100 per cent.
Mothers died . . . 00. per cent.
Infants born alive . . . 88.7 per cent.
Infants died . . . 11.3 per cent.

He then concludes that the Cæsarean operation, even modified by Saenger, does not give as good results as early-provoked labor, and he thinks that craniotomy is to be preferred to the first when the infant is at term. The following, in brief, are some of La Torre's conclusions. Spontaneous delivery before term is more frequent in well-formed subjects than in those who are afflicted with pelvic deformity. The product of conception acquires the same development as to weight and volume in a deformed pelvis as it does in a well-formed one. There being no normal proportion between the child and the pelvis, it is evident that a fetus at term cannot pass, without danger, through a pelvis measuring less than nine centimetres: in such cases the infants usually die and the mothers run great risks. To prevent the serious danger to women who have a narrowed pelvis (between five and a half and nine centimetres) we must bring about premature labor before term. With antiseptic precautions all the mothers are saved, and eighty-eight per cent. of the children.

Not only is premature labor advocated by French accoucheurs at present, but even abortion is openly advised when the continuation of the pregnancy will likely be fatal to the mother. Professor Pajot says, "Those who wait until the woman with a narrow pelvis is at full term, in order then to perform a Cæsarean operation or some other one, are like the savages who cut down a beautiful tree to get at the fruit." A writer asks, "Who would dare plunge a craniotome into the brain of a living child?" But what right have we—or, rather, the laparotomist—to take up a knife to risk the life of a woman in good health, who may be the joy of her family, or even its support in old age, simply to most likely exchange her life for the possible life of an infant of whom we know nothing in regard to its form or possible chance of living?

The Bacillus of Typhoid Fever.—Dr. Chantemesse, the head of Professor Cornil's laboratory, has been making some interesting experiments on this bacillus and the etiology of typhoid fever, with M. Vidal. He indicates a method for finding this micro-organism. It consists in simply adding to each of the gelatin tubes used (containing ten centigrammes each) four or five drops of a ten-per-cent. solu-

* See Clinical Lecture, page 653, ante.

tion of carbolic acid; this is afterwards used for the isolating-plates. The first tube is inoculated by passing a platinum wire through it that has first been steeped in the typhoid dejections; the addition of this feeble quantity of carbolic acid prevents the formation of other micro-organisms that otherwise would rapidly liquefy the gelatin. Many of these are much the same form as Eberth's bacillus, some of which can usually be found in the human mouth, but they can be distinguished by the fact that the typhoid bacillus is mobile, while the others are not. It seems that the real typhoid microbe lives for a long time in fecal matter, and no doubt is the active agent in causing the fever to be spread abroad. Passing on to the study of antiseptic agents on these matters, the authors find that only sulphuric acid in five-per-cent. solution, and carbolic acid in five- and ten-per-cent. solutions, have an action, and they *only when contact has been prolonged for some time*. Among the internal remedies employed, such as thalline, antipyrine, kairine, quinine, etc., they find that the one that acts best is sulphate of quinine, which, in a solution of one to eight hundred, usually stops the development of the typhoid bacillus.

In a further series of experiments M. Chantemesse shows that the opinion of Arnould, that water even rich in organic matters was antipathic to the inferior pathological micro-organisms, is not true. Taking a large bottle containing a little sand and full of water, which had been sterilized, some of the typhoid bacilli were put into it, and during the first few weeks the top of the water was found to give a culture of the bacillus. But after standing two months the surface-water did not contain any more of the microbes; on then decanting the water, and adding a little fresh water from the spigot, the earth and sand left in the bottle were enough to reproduce the bacilli in great quantities. This experiment shows how it is, after drawing off the water from a reservoir to clean it and then refilling it, that typhoid will break out in people using the fresh supply if it contain the bacillus. Numbers of such instances are known. When the water has settled, its superior layers seem to be inoffensive; but if the bottom is stirred up, the germs rise up and produce the disease. It is rather lucky that water must be rather warm to keep up the virulence of these bacilli (at least 19° C.); as a rule, our drinking-water does not reach that temperature, except in small reservoirs and in extremely hot weather; and this is given as a reason why typhoid epidemics are more frequent in summer and in hot climates. It might be presented as an excuse for Americans drinking ice-water that it is sterilized, if the ice was only pure. In any case, these studies are to be recommended to doctors not so much for the typhoid patients they may have to treat, but that they can fill the rôle of a true physician, which is not so much

to cure, which is difficult, but to prevent, which is often easy.

Arthritic Diabetes.—Dr. Blanquinque says that this form of disease is the most common, as it occurs in ninety per cent. of diabetics. The patients are mostly fat people from forty to sixty years old, often gouty, and good liver, while taking but little exercise. The proportion of sugar in the urine will vary, of course, but the following mode of treatment has made it fall in two weeks and often caused it to disappear in a month. In the first place, give the following prescription:

R Extract. valerianæ, 0.20 centigramme;
Extract. opii, 0.015 milligramme;
Sodii arseniat, 0.002 milligramme. M.
Fiat pil. no. i.

Give from four to six such pills with the principal meals of the day. The effect will be to calm the cough and to diminish the desire to urinate, as well as to act upon the disease. When the thirst is intense, the dose of opium in the pill should be increased at night. In the second place, the alimentary régime has considerable importance, no matter what has been said against it. Bouchardat's method is the best known, so it will not be necessary to enlarge upon it, except to say that it may be slightly modified so as to permit the use of bread if only the crust part is used, and he prefers that it should be toasted. Potatoes are also allowed now, if they are fried. All pastry, fruits, etc., are forbidden of course. As to the drink: wine is allowed of the red Bordeaux kinds, if it is mixed with Vichy water; coffee or tea is allowed after dinner with cognac, and if sweetening be required a little glycerin is permitted. Vichy water is to be drunk morning and evening, and a season passed at Vichy is recommended to those who can go. Bouchardat used to insist on his clients cutting their own wood, and practising fencing and other gymnastic exercises; and Chomel said "they should digest with their legs." Certainly we burn our sugar and fat by muscular contraction, so that exercise and frictions of all kinds, such as massage, are indicated.

Dr. Martineau's recommendation of lithia and arsenic has caused a good deal of comment and trial; but as it is not always convenient to make the water he uses, the following pill-form which M. Vigier gives may be used instead in the arthritic forms of this disease:

R Lithii carbonat., 0.10 centigramme;
Sodii arseniat., 0.003 milligramme;
Extract. gentianæ, 0.05 centigramme.
M. Fiat pilulæ.

S.—Give one of these pills evening and morning for several months.

Considerable comment has been made here on a phrase in a letter that Billroth, of Vienna, has written in one of the newspapers there.

Speaking of Pasteur's work, he said, "Well, we don't blame the French for applauding so much Pasteur's discovery, for not only have they not made any great progress in science these last twenty years, but they are following with difficulty and halting steps the colossal progress of German and English science." To put it mildly, this way of talking by the great Vienna surgeon has caused a great deal of irritation in Paris, and Herr Billroth is curtly reminded that he and others are much indebted for their education to such men as the illustrious dead French surgeons were, not to mention the ones now living. They also ask him what sort of men in neuropathology Germany can present in the last twenty years to compare with Duchenne (of Boulogne), Vulpian, Charcot, etc., or in physiology with Magendie, Flourens, Longet, Bernard, P. Bert, Brown-Séquard, etc. But, as that great lady, Mrs. Partington, once said, "comparisons are odorous," and, if the newspaper account can be relied upon, we can only wonder that a man of Billroth's stamp could be guilty of making them.

THOMAS LINN, M.D.

PARIS, June 3, 1887.

PROCEEDINGS OF SOCIETIES.

AMERICAN MEDICAL ASSOCIATION.

(Continued from page 640.)

Second Day, General Session.

ON motion, the regular order was suspended to receive reports of committees.

The Committee of Arrangements reported a number of invitations to the members, which were accepted.

THE REPORT OF THE TRUSTEES OF THE JOURNAL

was read by Dr. J. M. Toner. Dr. N. S. Davis, by special request of the Trustees, had been induced to continue in charge of editorial and publishing departments. The establishment of a printing-office by the Journal had worked satisfactorily. The report of the Editor shows an increase of circulation and an increased income. Total cost of the Journal of the Association, for the year ending March 31, 1887, was \$15,920.96; the total receipts from all sources were \$21,723.22,—from the Journal alone, \$7580.63; value of property on hand, \$1058.56. The Editor said, "When the Journal was commenced in 1883, the New York State Medical Society had recently repudiated the National Code of Ethics, thereby forfeiting her right to membership in the American Medical Association, and the seditious doctrine of a New Code or No Code was being actively disseminated in other States, and the Association was being misrepresented and de-

nounced by some of the most influential medical journals in the country. The result of this Code controversy was the final withdrawal from membership of a large number of those who espoused the New York Code during the years 1883-84. Hardly had this Code revolt spent its force, when a still more bitter opposition was encountered by the Association in attempting to effect a preliminary organization for the Ninth International Medical Congress,—an opposition which did not yield until after the annual meeting of the Association in May last, and many of those engaged in it had withdrawn either by direct request or by refusal to pay their dues. The full force of this last revolt was fairly spent during the first half of the Journal year, and during the last six months there have been more applications for membership and renewals of subscriptions than at any previous time since the Journal was established. The fact that in less than four years of such unprecedented professional controversy the Journal should have been sustained, while steadily, firmly, though temperately defending the Association, its National Code of Ethics, and persistently advocating the only practicable representative organization of the whole profession by local, State, and national Associations, and more than double its circulation, and at the same time increase the income of the Association more than threefold, certainly demonstrates the wisdom of its establishment, if it does not prove the ability, efficiency, and prudence of those having the responsibility of its management." In conclusion, the Editor recommended the addition of four pages of reading-matter to each number of the Journal at the commencement of the next volume. The Trustees had been authorized to expend \$6000 for editorial work, but had limited it to \$2758.95 during the past year in order to keep out of debt.

On motion of Dr. William Brodie, the report was adopted, with applause.

The special committee appointed at the last meeting to consider

PROPOSED CHANGES IN THE PLAN OF ORGANIZATION AND BY-LAWS OF THE ASSOCIATION

reported through the chairman, Dr. N. S. Davis. The plan of organization of the British Medical Association was first critically examined, and found not suited to the profession of the United States, which is spread over such a large area of country. The present plan of State and County Medical Societies sending delegates to the national Association was considered better suited to the organization of the whole profession. The following changes were proposed:

"*Members by Application* shall consist of such members of State, County, and District Medical Societies entitled to representation in this Association as shall make application in writing to the Treasurer, and accompany said

application with a certificate of good standing signed by the President and Secretary of the Society of which they are members, and the amount of the annual membership fee (five dollars). They shall have their name on the roll, and have all the rights and privileges accorded to Permanent Members, and shall retain their membership on the same terms."

This enables any one or even all of the members of recognized State and local Societies, under adequate safeguards, to become *de facto* permanent members of the American Medical Association without the expense of attending an annual meeting.

In place of the present Nominating Committee it is recommended to create a General Committee or Council, composed of two members from each State or other organization entitled to representation, each to serve for two years. It shall meet annually at the place and on the day preceding each annual meeting of the Association, and as often in that week as may be necessary: to nominate on the third day of each annual meeting all the general officers of the Association (none of whom shall be members of its own body), the members of the Committee on Arrangements, the Committee on Necrology, seven members of the Judicial Council, and three members of the Board of Trustees for Publication, for election by the Association; to recommend the place and time for holding the next annual meeting; and to consider and report on all subjects that may be referred to it by vote of the Association. The paragraph relating to the Committee on Publication should be rescinded, since its duties are performed by the Board of Trustees of the Journal, whose duties are to be specifically detailed and enlarged by another amendment.

The by-law requiring chairmen of Sections to read addresses before the general session to be changed to make it read "before the Section over which they preside." It was also recommended that the Standing Committee be empowered to invite three members of the Association, eminent in some of its departments, to deliver addresses in the general sessions of the next ensuing annual meeting, —one on a medical subject, another on a surgical, and a third upon state medicine. Both of these are in accordance with the practice of the British Medical Association.

On motion of Dr. Early, of Pennsylvania, the report was adopted and the committee discharged.

A communication was received from the American Pharmaceutical Association, asking the aid and co-operation of the American Medical Association in promoting the prescribing by physicians of official medicines only, or such preparations as have published formulas, in preference to others.

On motion, the communication was received and adopted as a resolution.

Dr. J. L. Lynch, of Baltimore, then read the

ADDRESS IN MEDICINE.

The first subject discussed was that of antipyretics. He attributed to fever a fatal influence in most of the diseases in which it is present, and considered that the means for safely reducing and keeping down a tendency to morbidly high temperature unquestionably constitute the most powerful weapon we possess in combating a large majority of the diseases to which mankind is heir. Medicines which increase heat-loss, antipyretics, are less valuable than those which prevent the abnormal heat-development. Quinine was the only agent of this kind that was in our possession until lately, when antipyrine was introduced by Knorr, of Erlangen. In gramme doses, repeated every hour until three or four doses have been taken, and afterwards every three or four hours, it had proved very efficient in his hands for reducing hyperpyrexia. Antifebrine (acetanilide) may be substituted, as it is cheaper, but it is not soluble in water, while antipyrine is. The new cardiac stimulants strophanthin and spartein sulphate were pronounced less useful than digitalis. The remaining portion of the address was devoted to a consideration of phthisis. He denied that the bacillus is the sole or even a frequent etiological factor in initiating tuberculosis, but did not deny that it has some pathological significance. Hygienic measures are of primary importance in preventing or curing phthisis. Bergeon's method, which he pronounced a mistaken one, is based upon an incorrect theory of the disease.

Third Day, General Session.

The President announced that the adoption of the report of the special committee on Changes of Organization also carried with it the adoption of the recommendations except those which were amendments to the Constitution, which must lie over until the next meeting under the rule.

A congratulatory telegram was received from the Ontario Medical Association in session, and Dr. William Brodie directed to send one in response.

OFFICERS FOR THE ENSUING YEAR.

President.—Dr. A. Y. P. Garnett, District of Columbia.

Vice-Presidents.—Drs. Duncan Eve, Tennessee; Darwin Colvin, New York; Charles J. O'Hagan, North Carolina; A. Stedman, Colorado.

Librarian.—Dr. C. H. A. Kleinschmidt, District of Columbia.

Treasurer.—Dr. R. J. Dunglison, Pennsylvania.

Assistant-Secretary.—Dr. Joseph Ransohoff, Ohio.

The place for next meeting is Cincinnati, on the second Tuesday in May, 1888. Chairman of Committee of Arrangements, with

power to appoint members of Committee, W. W. Dawson, of Cincinnati.

Trustees of the Journal.—Drs. L. Connor, Michigan; E. O. Shakespeare, Pennsylvania; W. T. Briggs, Tennessee.

Judicial Council.—Drs. J. H. Murphy, Minnesota; Joseph M. Toner, District of Columbia; J. K. Bartlett, Wisconsin; A. B. Sloan, Missouri; X. C. Scott, Ohio; B. McClure, Iowa; D. W. Stormont, Kansas. To fill a vacancy, James F. Hibberd, Indiana.

Committee on State Medicine.—Alabama, Jerome Cochrane; Arkansas, R. G. Jennings; California, J. W. Robertson; Colorado, P. Brumund; Connecticut, W. H. Whittimore; District of Columbia, G. W. Cook; Florida, N. D. Phillips; Georgia, T. S. Hopkins; Illinois, E. P. Cook; Indiana, J. M. Beard; Iowa, G. F. Jenkins; Kansas, W. L. Schenck; Kentucky, J. A. Larrabee; Louisiana, T. G. Richardson; Maine, Thomas Foster; Maryland, G. H. Rohé; Massachusetts, Grace Wolcott; Michigan, A. W. Alvord; Minnesota, C. N. Hewitt; Mississippi, T. R. Trotter; Missouri, Lester Hall; Nebraska, William Knapp; North Carolina, Eugene Grissom; New Hampshire, W. P. Porter; New Jersey, B. A. Watson; New York, A. N. Bell; Ohio, F. C. Bain; Pennsylvania, J. C. Dunn; Rhode Island, W. J. Burge; South Carolina, T. Legate; Tennessee, R. Cheatham; Texas, J. E. Sears; Vermont, S. H. Griswold; Virginia, H. M. Nash; West Virginia, J. E. Reeve; Wisconsin, J. K. Bartlett; United States Navy, Delavan Bloodgood; United States Marine Hospital, C. P. Goldsborough; Dakota Territory, E. M. Dow; New Mexico, R. Bailey.

Committee on Necrology.—J. M. Toner, Washington, D.C., Chairman; T. E. Murrell, Arkansas; B. B. Wyman, Alabama; J. G. Terry, California; M. H. Sears, Colorado; R. A. Lancaster, Florida; E. Ingalls, Illinois; J. F. Hibbard, Indiana; J. M. Emmert, Iowa; L. M. Minney, Kansas; J. G. Brooks, Kentucky; R. Matas, Louisiana; John Morris, Maryland; E. C. Bell, Massachusetts; G. E. Ramsey, Michigan; A. W. Strickfield, Minnesota; H. B. Merrill, Missouri; A. S. von Mansfelde, Nebraska; J. H. Tucker, North Carolina; J. F. Ill, New Jersey; J. W. Parsons, New Hampshire; L. D. Trowbridge, New York; H. J. Herrick, Ohio; F. Woodbury, Pennsylvania; W. J. Burge, Rhode Island; F. L. Parker, South Carolina; J. M. Savage, Tennessee; R. W. Park, Texas; M. R. Crane, Vermont; L. Ashton, Virginia; J. T. Reeve, Wisconsin; J. N. Weir, Dakota; R. Bailey, New Mexico.

On motion of Dr. P. H. Millard, the report was accepted.

The Permanent Secretary announced the officers of the Sections, as follows:

Practice of Medicine, Materia Medica, and Physiology.—Chairman, A. B. Palmer, Michigan; Secretary, N. S. Davis, Jr., Illinois.

Section on Obstetrics and Diseases of

Women.—Chairman, Eli Van de Warker, New York; Secretary, E. W. Cushing, Massachusetts.

Section on Surgery and Anatomy.—Chairman, Donald McLean, Michigan; Secretary, B. A. Watson, New Jersey.

Section on Ophthalmology and Otology.—Chairman, F. E. Hotz, Illinois; Secretary, H. H. Jackson, Pennsylvania.

Diseases of Children.—Chairman, F. E. Waxham, Illinois; Secretary, W. B. Lawrence, Arkansas.

Oral and Dental Surgery.—Chairman, J. Taft, Ohio; Secretary, E. S. Talbot, Illinois.

State Medicine.—Chairman, H. B. Baker, Michigan; Secretary, S. T. Armstrong, Tennessee.

Medical Jurisprudence.—Chairman, E. M. Reid, Maryland; Secretary, C. B. Bell, Massachusetts.

Section on Dermatology and Syphilography.—Chairman, L. D. Bulkley, New York; Secretary, T. F. Dunlap, Kentucky.

Dr. N. S. Davis, Sr., having mentioned the necessity of appointing members to prepare the three addresses in accordance with the amendments which had been adopted, after some discussion Dr. D. J. Roberts, of Tennessee, moved that action on this point be deferred until 1888. Dr. Davis moved as an amendment that the action as to the By-Laws be permitted to remain, inasmuch as there were very few negative votes, but that the others, which were amendments to the Constitution, should lie over for ratification at the next meeting. This was accepted by the mover, and was unanimously adopted.

Dr. G. H. Rohé, Secretary of the Rush Monument Committee, read the report of the Committee, showing that the total contribution to the fund is three hundred and eighty-nine dollars. The Treasurer's account was audited and found correct.

CREMATION.

Dr. John Morris, of Baltimore, read for Dr. J. M. Keller, of Arkansas, Chairman, the report of the special committee appointed at the last meeting to report on this subject. In default of cremation, and to prepare the public mind for it, cremacausis, or rapid disintegration of the body by caustic agents, was advised. The following resolution was appended to the report:

"*Resolved*, That it is the judgment of the American Medical Association that the burial of all persons dying with zymotic diseases should be placed by law under the control of the health authorities, and that in all such cases of disease chemical agents should be used by such authorities to bring about a rapid disintegration of the dead body."

At the request of the Committee, the report was referred to the Section on State Medicine for action.

INOCULATION FOR YELLOW FEVER.

A report from the special committee on Yellow-Fever Inoculation, through Dr. J. McF. Gaston, of Georgia, was read, recommending the passage of the following resolutions:

"Whereas, An appropriation has been made by Congress for investigating yellow-fever inoculation, and an eminent bacteriologist has been appointed to examine the data presented in Mexico and Brazil;

"Resolved, That it is desirable that two other members of the medical profession should be associated in this work, one having practical and clinical acquaintance with yellow fever, and the other being able to communicate with the population of the respective localities.

"Resolved, That a committee of three be appointed by the President of this Association to communicate this action to President Cleveland, setting forth the grounds for such recommendation."

Dr. G. H. Rohé unsuccessfully moved to table the resolution; it was adopted. The regular order of business was resumed.

The Address in Obstetrics was read by Dr. F. M. Johnson, of Missouri, Chairman of this Section.

Dr. George H. Rohé, Chairman, read the

ADDRESS IN STATE MEDICINE.

After referring to the bacterial character of several diseases, he showed the importance of sanitary measures. In typhoid the physician fails in his duty who does not adopt every means for the disinfection of the intestinal discharges. Health authorities should have under their control establishments where disinfection can be carried out on a large scale and at the public expense. Such institutions are in successful operation in a number of Continental European cities.

"Quarantine, a word which for more than five centuries has been synonymous with barbarism, is becoming under modern methods a safeguard to the public against infection and an advantage instead of obstruction to commerce. The results achieved at the model quarantine station at New Orleans encourage the hope, and almost warrant the prediction, that the days of the quarantines of detention, whether by sea or land, are past, and that quarantine in future will mean simply *thorough disinfection* of fomites, and of course effective isolation of persons already infected.

"Cremation of garbage seems to be the best method yet devised for the inoffensive destruction or final disposal of solid city wastes.

"The irrigation system of sewage-disposal has steadily won favor. In Berlin, Breslau, and Dantzic in Germany, Birmingham in England, and Pullman and other places in this country, it has been in successful operation. Chemical precipitation and purification of sewage has also been adopted, with satis-

factory results, in various German cities. A board of distinguished engineers recently recommended the same system for the city of Providence, Rhode Island.

"Professor Vaughan's discovery of a very poisonous ptomaine in cheese, ice-cream, and milk undergoing certain chemical changes has been confirmed by a number of investigators in various parts of the country. Vaughan's suggestion that tyrotoxin may be found to be the poison which produces cholera infantum opens up a new field for investigation in which every physician must of necessity be interested.

"Analyses of food and drugs made during the year in Massachusetts and New York show the wide extent to which adulteration is practised and how the people are defrauded. Among the most startling instances are olive oil, of which sixty-eight samples out of ninety-one were spurious. Vinegar was adulterated in seventy-nine samples out of one hundred and sixteen, mustard one hundred and twenty-four times in two hundred and eleven, white pepper sixty-three times in one hundred and twenty-eight, black pepper forty-one times in seventy-one, mace twenty-nine times in forty-five. Of nine samples of horseradish examined only one was found genuine. A precipitate of uncrystallizable sugar and coloring-matter and chloride of tin (poisonous) is sold to candy-makers for making confectionery. Citrate of iron from respectable manufacturers contained three and a half per cent. of quinine, instead of the twelve per cent. demanded by the pharmacopœia. Authority and means should be given to the health-authorities to protect the public from these frauds, many of which are a source of danger to life and health.

"Statistics collected by the speaker show that five-sixths of the inhabitants of cities in this country have no facilities for bathing, except such as are afforded by a pail and sponge, or an easily accessible river, lake, or other body of water. The establishment of public baths is urgently recommended, both as a sanitary as well as a normal measure. Tub or pool baths are objectionable both on account of expense and lack of privacy in the latter. The spray-baths in use in the German and French army barracks are recommended. These are not expensive, either in first cost or administration, and allow each bather absolute privacy and the opportunity for a thorough cleansing in clean water. Public baths should be open the year round, and not only during the summer.

"A number of instances are grouped together showing how the enforcement of appropriate sanitary measures has saved life. In Michigan the saving of life from one disease (scarlet fever) has amounted during the last eleven years to three thousand seven hundred and eighteen, or three hundred and thirty-eight per year. In 1886 appropriate sanitary measures saved the lives of two hundred and

ninety-eight persons, who would have died of diphtheria if such measures had not been enforced. In England and Wales the average annual saving of life due to sanitary measures has amounted, in the five years ending 1885, to sixty-two thousand. In Baltimore a marked reduction of deaths from infectious diseases has followed the enforcement of certain sanitary precautions. In Memphis the death-rate has been reduced in six years from thirty-five per thousand to 23.80 per thousand. In Chicago the reduction of mortality in the last five years has been from 25.69 per thousand to 19.46 per thousand, a net saving of seventeen thousand two hundred and fourteen lives in that city during that period.

"While all advances in sanitary administration have doubtless contributed to produce these good results, the main influence is to be attributed to three factors. These are *compulsory notification of infectious diseases, prompt and effective isolation of the sick and infected, and thorough disinfection of all infected articles and sources of infection*. These must be the watchwords of the practical sanitarian of the future."

Dr. R. J. Dunglison, Treasurer of the Association, presented his report for the past year. Balance on hand, \$1403.77. The accounts were audited and found correct.

On motion of Dr. N. S. Davis, one thousand—amended from five hundred—dollars was ordered to be appropriated for the International Medical Congress.

The report of the Librarian, Dr. C. H. Kleinschmidt, of Washington, D.C., was read and approved. Subscription to the *Index Medicus* was ordered to be renewed.

Fourth Day.

The Nominating Committee reported the following names of physicians to deliver addresses at the next meeting: R. Beverly Cole, M.D., of San Francisco, California, on General Medicine; E. M. Moore, M.D., of Rochester, New York, on Surgery; James L. Cabell, M.D., of Virginia, on Public Medicine.

The Association adopted the report of the Committee, and Drs. Toner, Griscom, and Darwin Colvin were appointed a committee to notify those selected to deliver addresses, with power to fill vacancies.

The following was offered by Surgeon-General Hamilton, of the United States Marine Hospital Service:

"Whereas, The President of the United States has appointed George M. Sternberg, Surgeon United States Army, to proceed to Mexico and Brazil for the purpose of investigating the method there practised for the prevention of yellow fever by inoculation;

"Whereas, This report will be accompanied by photo-micrographic illustrations of the appearance of the principal organs of the body affected by yellow fever: therefore, be it

"Resolved, That the Senate and House of Representatives be requested to cause such number of copies of Dr. Sternberg's report to be printed as may be needed by the profession of medicine of the United States; and be it further

"Resolved, That the resolution on this subject passed yesterday be rescinded."

Dr. J. McF. Gaston objected that it was not in order. After some discussion, the previous question was demanded by the proper number. It was decided in the affirmative by a large vote, and the resolution of Dr. Hamilton was then adopted.

The Address in Dental and Oral Surgery was read by Dr. J. S. Marshall, of Illinois, Chairman of the Section. He advocated preservative treatment of teeth, and suggested that instruction should regularly be given on the subject in medical colleges.

The Address in Medical Jurisprudence was read by Dr. I. N. Quimby, Chairman of the Section. After he had discussed the subject historically, he took up for especial condemnation the crimes of feticide and intoxication.

On motion of Dr. A. N. Bell, it was agreed that the committees should be appointed as requested in this Address.

The President appointed them as follows: *Criminality of Feticide, and Measures for its Prevention*.—I. N. Quimby, New Jersey; W. B. Atkinson, Pennsylvania; W. H. Byford, Illinois.

Duties Commonly Exercised by Coroners.—H. O. Marcy, Massachusetts; J. H. H. Burge, New York; W. W. Dawson, Ohio.

Dr. J. M. Toner reported that the necrological notices had been published as before.

The report of the Auditors was presented and accepted:

"The undersigned, Auditing Committee of the accounts of the Treasurer of the American Medical Association, and also of the Treasurer of the Board of Trustees, report that they have carefully examined the accounts of said officers, and find them correctly cast and properly vouched, and that the balances are as reported by said officers to the Association. In behalf of the Auditing Committee, ALONZO GARCELON,

"Chairman."

Dr. Davis, of the Committee on Meteorological Investigations, etc., reported progress. On motion of Dr. Brodie, the report was accepted and the Committee continued.

Dr. Davis offered the following:

"Resolved, That the regular graduates of such dental and oral schools and colleges as require of their students a standard of preliminary or general education and a term of professional study equal to the best class of the medical colleges of this country, and embrace in their curriculum all the fundamental branches of medicine, differing chiefly by substituting practical and clinical instruction

in dental and oral medicine and surgery in place of practical and clinical instruction in general medicine and surgery, be recognized as members of the regular profession of medicine, and eligible to membership in this Association on the same conditions and subject to the same regulations as other members."

This was adopted by a large majority.

Dr. N. S. Davis read the following:

"Resolved, That the Committee of Arrangements are hereby directed at each annual meeting of the Association to so arrange the programmes regarding entertainments and receptions that the evening of the third day be reserved for a regular annual dinner under the following general regulations. The chief registration-officer shall provide for each registration-table a paper headed 'Annual Dinner of the American Medical Association,' with two columns for names, one headed tickets without wines or liquors, at a specified sum; the other tickets with wines, etc., at a specified sum; that each member, when registering, can have the opportunity to take a ticket for the dinner if he desires it, and can be entirely free to enjoy the dinner not only without using wines, but also without being required to assist in paying for that drunk by others; while those who desire the addition of wines will enjoy the same liberty. It shall be the duty of the Committee of Arrangements to select a proper place for the dinner, to ascertain the cost per plate on the plan already indicated, that the price paid for the tickets will pay the entire cost of the dinner, leaving no part to be paid either by the local profession or by the Treasurer of the Association."

This was also adopted by a large majority.

A motion to give an honorarium to the Permanent Secretary was lost, as all the income would be needed for the Journal.

On motion of Dr. E. A. Wood, of Pennsylvania, the President was requested to appoint a committee of three to prepare a report on Dietetics to be read at the next meeting. This was carried, and the President appointed Drs. E. A. Wood, J. S. Whittaker, and Frank Woodbury.

The Secretary announced the receipt of a telegram from the President-elect, A. Y. P. Garnett, M.D., of Washington, D.C., acknowledging the honor which had been conferred upon him, with regret at being unable to attend in person.

The usual vote of thanks was prepared and read by Dr. William Brodie, and unanimously adopted.

The retiring President, Dr. Gregory, in a brief address thanked the members for their assistance in conducting this very successful meeting, and declared that in discharging his duties as President he had achieved his highest ambition in life.

The session was then declared adjourned.

An excursion to Pullman was provided for a number of the members in the afternoon.

THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

MEETING OF MAY 26, 27, and 28, 1887.

(Continued from page 642.)

Second Day.

FURTHER RESEARCHES UPON THE FUNCTION OF THE RECURRENT LARYNGEAL NERVE: BEING A SERIES OF EXPERIMENTS FROM THE BIOLOGICAL LABORATORY OF THE JOHNS HOPKINS UNIVERSITY. BY DR. FRANK DONALDSON, JR., OF BALTIMORE.

IN a former paper read at a previous meeting the author had criticised certain conclusions advanced by Dr. F. H. Hooper. The conclusions which Dr. Donaldson had reached were: that the constrictors do not cease to act under deep narcosis or suspension of consciousness from any cause; that we do not always obtain abduction on irritation when consciousness is suspended; that the abduction was not reflex, and was not dependent on unconsciousness; that it is with weak stimuli that abduction takes place, and the movement passes into adduction as the stimulus is increased (these results invariably followed whether the animal was slightly or deeply narcotized, or when the medulla was destroyed, or when local death had taken place); that after strong and continued stimuli the abductor muscles became worn out and did not respond to stimuli.

These conclusions had been strongly criticised, and the present series of experiments were performed to test the correctness of the above views. He had shown that abduction of the vocal bands can be obtained without ether, and that it is a physiological fact that opening or closing of the larynx depends upon the strength of the stimulus. With weak stimuli abduction was produced, while with strong stimuli adduction was caused.

THE ANATOMY AND PHYSIOLOGY OF THE RECURRENT LARYNGEAL NERVE; FROM THE PHYSIOLOGICAL LABORATORY OF HARVARD MEDICAL SCHOOL. BY FRANKLIN H. HOOPER, M.D., OF BOSTON.

The anatomy of this nerve is now complete and exact; but up to a very recent date much confusion existed on this subject. To find out why these nerves were recurrent it is necessary to begin with the embryo. The recurrence is due to certain changes in the branchial arches and the descent of the heart into the thorax. At one time in the period of development these laryngeal nerves are straight, but as the heart descends they are brought down. The proof of this is found in the abnormal condition of the nerve in cases of irregularity of the great vessels which branch from the aorta. These nerves (at least in dogs and cats) contain no sensory fibres.

The larynx possesses three functions, controlled by three distinct sets of muscles, all

innervated by the recurrent nerves. These functions are: 1, respiration; 2, sphincter action, which closes the larynx and prevents the entrance of foreign bodies, and plays an important part in expulsive acts; and, 3, phonatory action.

Stimuli applied to recurrent nerves produces adduction in certain animals (dogs), and abduction in other animals (cats). Only a few experiments have been made in man, but as far as they go they seem to show that stimulation closes the glottis. Under ether or profound morphia-narcosis, stimulation of the recurrent nerves produces opening of the glottis in dogs. Three hundred and twelve experiments were reported. Some of the animals were under the influence of chloral, chloroform, morphia, or ether. Under ether dilatation was produced with weak currents, while contraction could not be produced with even the strongest current. As the dog begins to come out of the ether, dilatation cannot be induced with any current, while contraction is brought about by currents decreasing in intensity as the effect of the ether passes off. A similar effect was observed in one case after the use of a large dose of morphia. After small doses of ether, stimulation produces two effects: first vibration, second closure. Under large doses of ether, four effects are observed, according to the intensity of the irritation: vibration, complete dilatation, mixed movement, and closure. After small doses of morphia, chloral, and chloroform, stimulation produces the same effects as after small doses of ether.

DISCUSSION.

In the discussion Dr. Knight cautioned the Congress with regard to rashly applying the results of experiments upon animals to the human subject. The effects vary greatly under circumstances which are not well understood.

Dr. Allen M. Starr, of New York, recently had had an opportunity to see in Paris some experiments by Charcot on hypnotized individuals. It is well known that in this state slight percussion of a nerve will produce contraction in the muscles supplied by that nerve. In one of these cases slight stroking in the course of the recurrent laryngeal nerve over the trachea, below the larynx, produced such adduction of the vocal cords and so interfered with breathing that it became a question whether it would not be necessary to resort to tracheotomy.

Dr. F. H. Hooper said that he had been unable to get the effect which Dr. Donaldson had described.

CERTAIN MEASURES FOR THE RELIEF OF CONGESTIVE HEADACHES. BY WILLIAM C. GLASGOW, M.D., OF ST. LOUIS.

The most severe symptoms in this condition are the pain and sense of constriction of

the forehead. If the pain be analyzed, it will be found that it is of two kinds: one gives a dull sense of fullness and occasional throbbing over the temple; the other is of the sharp, lancinating character so generally known as neuralgia. At times both of these varieties are present in the same case. In the one there is fullness of the vessels, and in the other disordered nerve-action. Both varieties are often due to the same pathological condition of the nasal chambers. During congestive headache, if we examine the nose we find the cavernous bodies are full and tense; the degree of tenseness corresponds to a certain extent to the degree of headache. The method of treatment which he had adopted during the past four years had been the local abstraction of blood. A knife is not required; a simple prick of the mucous membrane is sufficient. In many cases the relief is immediate. The operation may have to be repeated in a month or two. He had seen few cases in which permanent relief had not followed a repetition of the operation from two to six times. The amount of blood drawn rarely exceeds an ounce. A number of illustrative cases were cited.

"A Case of Leucoplakia; Recovery," was the subject of a paper by Dr. W. C. Glasgow, of St. Louis, which was read by title.

DISCUSSION ON THE TREATMENT OF LARYNGITIS IN PROFESSIONALS WHO ARE UNABLE TO REST.

Dr. J. Solis Cohen, of Philadelphia, opened the discussion. When a professional has hoarseness the result of laryngitis and wants to use his voice in a few hours, the best method to enable him to do this, in his experience, is to administer a sharp emetic; then let the patient rest until the time of the performance, sucking pieces of ice and keeping a cold compress to the neck. In chronic laryngitis he had found nothing of so much service as a weak solution of sulphate of zinc (two grains to the ounce) used in a spray apparatus. In the intervals of the play the patient may inhale a little compound tincture of benzoin if he is hoarse. Another expedient of considerable service is the use of a respirator with turpentine, terebene, or eucalyptol, or something of that kind. He sometimes directs the patient to sprinkle a little turpentine on the floor of the bedroom, but was, however, not aware of any special method which is adapted to this class of individuals.

Dr. T. A. De Blois had had some experience with these cases, and had endeavored to keep up the systematic use of sulphate of zinc, but had found that the hoarseness continued unless the larynx is rested. Nitrate of silver gives excellent results, and the most disastrous results follow the use of cocaine. There seems to be a certain amount of relaxation following the use of muriate of cocaine.

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These Granules have been divided, according to the metric system, into strengths of half milligramme, one milligramme, and centigramme. In each instance, however, their equivalents are stated in grains or fractions thereof. Such a plan, we think, will easily familiarize the practitioner with the metric system for all practical purposes, and will commend itself at once to their recognition.

The selection of the list is based entirely upon the physiological action of these active or essential principles, and are therefore administered upon a rational basis, thus making therapeutics stand upon firmer ground than that which it has occupied or even still occupies, when compared with the advances which its sister sciences have taken within the last decade. Under the administration of these Granules, therapeutics partake of the character of a specific form of treatment.

The cutting short or strangulation of many acute diseases, while as yet in their incipient or formative stages, has not been sufficiently appreciated. That this is possible, the medical literature of the day affords ample evidence; but to accomplish it, treatment must be both scientific and energetic, *i.e.*, must be based upon the physiological action of drugs, and upon the action of reliable medications.

With such an intention these Granules have been prepared abroad (in France particularly, as suggested by Dr. Burggraefe). This method of treatment has met with success, and it will be a matter of no surprise that therapeutists in this country should be prompt in adopting it.

In the hands of the physician, and *his hands only*, these Granules are potent remedies, capable of accomplishing results far more quickly and certainly than the uncertain fluid extracts and tinctures, and far more pleasantly.

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CIOUTINE HYDROBROMAS.....	1-65 gr. (1 mill.).
Med. prop.—Nerve Sedative.	
CODEINE.....	1-65 gr. (1 milligram).
Med. prop.—Hypnotic, Sedative.	
COLCHICIN.....	1-130 gr. (½ milligram).
Med. prop.—Sedative, Diuretic, Emetic.	
DATURINE.....	1-130 gr. (½ milligram).
Med. prop.—Narcotic, Anodyne.	
DIASTASE.....	1-6 gr. (1 centigram).
Med. prop.—Possesses the power of converting starch into sugar (of the grape).	
ELATERINE.....	1-65 gr. (1 milligram).
Med. prop.—Purgative.	
EMETINE.....	1-65 gr. (1 milligram).
Med. prop.—Emetic, Diaphoretic, Expectorant.	
ERGOTINE.....	1-6 gr. (1 centigram).
Med. prop.—Emmenagogue, Parturient.	
FERRI ARSENIAS.....	1-65 gr. (1 milligram).
Med. prop.—Tonic, Alterative.	
HYDARGYRI IODID. RUB.....	1-65 gr. (1 mill.).
Med. prop.—Alterative.	
HYDARGYRI IODID. VIR.....	1-6 gr. (1 cent.).
Med. prop.—Alterative.	
HYOSCYAMINE.....	1-130 gr. (½ milligram).
Med. prop.—Hypnotic, Antispasmodic.	
KOOSINE.....	1-65 gr. (1 milligram).
Med. prop.—Anthelmintic.	
MORPHINÆ HYDROBROM.....	1-65 gr. (1 mill.).
Med. prop.—Anodyne.	
NARCEIN.....	1-65 gr. (1 milligram).
Med. prop.—Supposed to influence the inferior part of the spinal marrow, diminishing sensation and mobility in the inferior extremities.	
PICROTOXIN.....	1-130 gr. (½ milligram).
Med. prop.—Narcotic.	
PILOCARPINÆ.....	1-65 gr. (1 milligram).
Med. prop.—Sudorific.	
POTASSII ARSENIAS.....	1-65 gr. (1 milligram).
Med. prop.—Alterative.	
QUASSIN.....	1-65 gr. (1 milligram).
Med. prop.—Tonic, Febrifuge, Anthelmintic.	

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In these cases we may conclude that unless there is rest there is no cure.

Dr. Beverly Robinson, of New York, said that his experience with the class of cases under discussion had led him to believe that, so far as the acute cases are concerned, there are milder measures than the use of an emetic. The use of tablet triturates of chloride of ammonium, repeated as often as once every fifteen minutes, is one of the most efficient methods of overcoming the difficulty. For local application there is nothing better than the carbolized spray. In the chronic form of laryngitis in vocalists we cannot obtain much information from the appearance of the mucous membrane. In these cases he had often found the membranes red, and this may continue after the trouble with the voice has disappeared. Here the difficulty is chiefly in the nervo-muscular apparatus. He found the internal use of a good wine of cocoa with the application of a faradic current to the neck very useful; the faradism to be repeated once or twice a day.

Dr. F. H. Bosworth, of New York, said that there is no such disease as laryngitis, as that term is used to mean an inflammatory process. The seat of the disease is not in the larynx, but in the nasal passages. If we apply cocaine to the nasal mucous membrane, causing contraction of the blood-vessels, and follow this by the use of chromic acid, thus eliminating the coryza, it will usually be found that the laryngitis has disappeared. Relaxation has been spoken of as following the application of cocaine. Although he had used the drug in many cases, he had seen this result in only two, and these were cases of hay-fever. His preferred method of using cocaine is to suspend it in fluid cosmoline and direct the patient to spray the nose and throat with it.

Dr. C. E. Sajous said that the action of cocaine in laryngitis is pernicious. In cold in the head it is useful, but should not be used within four hours of the time when it is desired to use the voice. In the majority of the cases of chronic laryngitis the condition is due largely to fatigue. Quinine and nuxvomica internally, with the external use of a weak faradic current, are the best means to employ. Cocoa-wine is also advantageous.

Dr. W. C. Glasgow in this class of cases devotes himself entirely to the larynx and does not treat the nose. He usually employs applications of carbolized iodine to the larynx, which is a soothing application and relieves congestion. It also acts as a stimulant and enables the person to keep at his work; but it does not cure.

Dr. Morris J. Asch said that the best way to treat the acute cases is that which we pursue in other acute cases, which is the treatment suggested by Dr. Cohen except the emetic. The employment of muriate of ammonia is useful in solution in compound liquorice mix-

ture. The chronic cases are more difficult to treat, because the patients cannot quit work. In them he had found nothing to equal the application of astringents. He had used the spray in some cases, but found that more good is done by the use of the brush. The solution which he most frequently uses is one of the perchloride of iron, thirty to sixty grains to the ounce. Where a person has to use the voice in a few hours, a single application will put him in a good condition temporarily. Another point to be considered is that these individuals live usually irregular lives, drinking wine and eating heartily. There is therefore nearly always some hepatic trouble which requires attention. He did not believe it possible to put the larynx of a singer in perfect order as long as he continues to work.

Dr. F. H. Hooper: In these professionals there is sometimes an alteration in the quality of the voice, the result of over-exertion, and owing apparently to a want of tension in one vocal cord. To relieve this he had used electricity outside, with the aromatic spirit of ammonia, thirty to forty drops to half a glass of soda-water, internally.

Dr. J. N. Mackenzie agreed with Dr. Bosworth with reference to the dependence of laryngeal disease on nasal trouble. The vast majority of cases of laryngitis are associated with disease of the nasal passages, and upon the recognition of this fact depends the successful treatment of many cases of chronic laryngitis. While admitting the existence of chronic primary laryngitis, he considered the majority of cases due to disease higher up in the respiratory passages. A caution is to be observed with reference to the indiscriminate use of cocaine in diseases of the nose and throat. It should never be applied just before a person is going to use the voice. The sensation which it produces in the larynx is only next to that of hanging. In the nose the effect is very pleasant, provided none of the solution be allowed to trickle into the larynx.

Dr. B. F. Westbrook, of Brooklyn: While it is true that many of these singers and elocutionists suffer from strain and overwork, it is probable that in the majority of such cases the seat of the whole trouble is in some derangement of the digestive apparatus which predisposes to these affections: therefore an emetic or active purgatives would be useful in many of these cases. After the emetic he usually gives small doses of the mineral acids, frequently repeated,—say one or two drops of dilute muriatic or nitric acid repeated every hour.

Dr. C. C. Rice, of New York, read a paper entitled "Glandular and Connective-Tissue Hypertrophies in the Lateral Walls of the Pharynx," advocating the employment of galvanism.

The next paper was by Dr. Charles H. Knight, of New York, on

THE GALVANO-CAUTERY IN THE TREATMENT OF HYPERTROPHIED TONSILS.

Among the objections to the cutting operation, the principal one is the danger of hemorrhage. Moreover, at times the tonsil is so deeply situated that it is not possible to get the tonsillotome over it. Patients sometimes positively object to the cutting operation. There are two methods of using the galvano-cautery: one is by puncture, and the other by the snare. The number of sittings required varies from five to ten, and not more than three punctures should be made at each sitting. The method with the snare is much the quicker. The current should be used intermittently, and traction should only be made during the passage of the current. He did not recommend this as a universal operation, for in the majority of cases the cutting operation is easier and better. It is to be used where there is danger of hemorrhage; but in adults he was almost disposed to say that the galvano-cautery should always be used.

In the discussion the usual methods of treatment found advocates.

NOTE ON A FREQUENT CAUSE OF NASAL HEMORRHAGE. BY DR. BEVERLY ROBISON, OF NEW YORK.

The ulcerations in cases of atrophic rhinitis had been a most frequent cause of hemorrhage in the experience of the speaker. He had found himself unable to detach the crusts from these ulcerations either by the use of douches or sprays, so well as by the employment of ointments. In the course of two or three days the patient is able to blow out the crusts. He had found no ointment act so well in imbibing the crusts and producing changes in the ulcerations as the ammoniated mercury ointment of the Pharmacopœia, of one-half or full strength, made up with vaseline. In applying plugs in the case of hemorrhage, he had found Steele's flexible probe useful, especially in children. He had found the so-called sheet-sponge a very good plug. This may be cut in long strips and pushed into the nostril until the bleeding is controlled by the pressure.

(To be continued.)

THE ASSOCIATION OF AMERICAN PHYSICIANS.

THE Second Annual Meeting of the Association was held in the Army Medical Museum Building, Washington, June 2 and 3, 1887.

On Thursday, June 2, the meeting was opened by an Address by the President, Dr. S. Weir Mitchell, of Philadelphia. He referred to the purposes of the Association as being purely scientific; it is not concerned about difficult ethical questions and medical

politics. He hoped that all would endeavor to make the coming meeting of the Congress of American Physicians and Surgeons a success. He announced the death of three members during the year: Dr. Thomas F. Rochester, of Buffalo, Dr. Thomas A. McBride, of New York, and Dr. E. D. Hudson, Jr., of New York.

The first paper, entitled

CIRRHOISIS OF THE LIVER IN CHILDREN,

was read by Dr. R. Palmer Howard, of Montreal, who reported two cases in which cirrhosis of the liver was present in children,—brother and sister. He exhibited sections of the organ.

DISCUSSION.

Dr. William W. Welch mentioned one case in which cirrhosis had occurred in a child, 12 years of age, who came from the coast of Africa and suffered with malaria.

Dr. F. Forsheimer, of Cincinnati, had seen two cases that may possibly be called cirrhosis, which he attributed to syphilis: he thought syphilis the most common cause of cirrhosis of the liver in children.

Dr. William Pepper, of Philadelphia, mentioned a case in which cirrhosis of the liver followed measles in a child 8 years of age. There was no syphilitic history. During the attack of measles there were occasional attacks of catarrhal jaundice; subsequently the symptoms of cirrhosis made their appearance, and death soon followed. The whole duration of the case could not have been less than a year. At the autopsy a typical hob-nail liver was found. The liver had been much enlarged, but it had gradually contracted so that at the time of death it was of about the normal size.

OBSTRUCTIVE SAFETY-VALVE ACTION IN THE HEART AND DIRECT FUNCTIONAL MURMURS. BY JOHN GUITÉRAS, M.D., OF CHARLESTON.

The author had dwelt in a previous paper upon the significance of mitral direct presystolic murmurs, which were proved by the autopsy to be unconnected with any lesion of the mitral orifice. The lesions were those of intense aortic regurgitation. He had attributed the murmurs to the recoil of the blood upon the mitral leaflets holding them tense against the stream of blood coming from the auricle. In the opinion of the late Dr. Flint, direct functional mitral murmurs were limited to a small number of cases of aortic regurgitation, but the author thought that functional mitral murmurs were not so rare. Obstructive functional murmurs are common in aortic regurgitation.

Pulmonary systolic murmurs are more frequent than any other form of cardiac murmurs. In examining one hundred consecutive cases, he had found in sixty-two systolic pulmonary-artery murmurs. In these the murmurs were present during tranquil breath-

ing or during respiration in such a way as to produce changes in the pulmonary circulation. If account is taken of the bruits heard in this region the proportion becomes greater. The clearness with which these murmurs are heard depends upon the proximity of the artery, the thinness of the chest-walls, the nature of the surroundings, and, finally, the proximity of the main trunk to the capillary distribution. Systolic pulmonary murmurs can be developed in the majority of healthy individuals, if we exclude those with thick chest-walls and those who are not intelligent enough to modify their breathing as directed. The author held that such a murmur was a dynamic obstructive valvular murmur, and is produced by the effect of changes of blood-pressure upon the semilunar valves. A certain degree of pressure in the artery must tend to prevent the opening of the valve. This causes a slanting position of the valves and a narrowing of the orifice with the production of a sonorous whirl. The fact that such murmurs are not more frequently developed at the aortic orifice is due to the greater power of the ventricle and the wider distribution of the systemic circulation. There are, however, cases in which increased arterial tension is expressed not only by accentuation of the aortic second sound, but by an aortic systolic murmur. He had heard it in atheroma and in Bright's disease where there was no marked anæmia. Pulmonary-artery murmur as heard in ordinary breathing is confined to the expiratory act, and is loudest at the beginning of the act. The murmur is sometimes only heard with the first beat that occurs with expiration. In order to further develop this murmur it is only necessary to arrest respiration. It is better to stop breathing during expiration, especially at the end of normal expiration. A full expiration makes the murmur louder. At the end of inspiration it is more difficult to develop the murmur, for several reasons: 1, because it requires entire arrest of respiration to produce engorgement of the main trunk; 2, because prolonged inspiratory effort is accompanied by a continued hum of the intercostal muscles; 3, because the expansion of the lung interferes with the transmission of any murmur that may be present. A slight murmur is frequently heard in inspiration if the arrest of breathing is pushed far enough. The speaker asked, "Are we not justified in assuming that there is a safety-valve action in this attitude of the pulmonary valve which, together with the leakage at the tricuspid orifice, tends to prevent engorgement of the lungs by retardation of the flow of blood in the systemic veins, so that continued for a time it does no harm?" In reference to the murmurs of anæmia, the author thought that they were due to some disturbance of the valvular apparatus. In this condition there is a marked reduction in the quantity of blood. The valves require a certain amount of ex-

pansion of the vessels in order to allow them to apply themselves to the walls. Venous hums and basic murmurs he thought to be of valvular origin.

(To be continued.)

NEW REMEDIES AND CLINICAL NOTES.

EXPECTANT TREATMENT OF EXTRA-UTERINE PREGNANCY.—Dr. Beugnies-Corbeau, of Givet (Ardennes), describes in the *Union Médicale* of April 2 a case of extra-uterine gestation which had been left to nature owing to the mismanagement of a former medical attendant. He saw the patient in 1883. She was robust, and about 50 years old, and was subject to epistaxis. Twelve years previously she was pregnant for the first and last time. During her pregnancy she was subject to violent attacks of abdominal pain. Her physician believed that she was not pregnant, but that she had ovarian disease. At term she was seized with labor-pains. The physician came with all his instruments, and, after waiting for three days in the house without diagnosing the case, went away believing, it seems, that he had to deal with an inflamed ovarian cyst or some kindred disease, which he was pleased to call "dropsy of the ovaries." After three years of ill health, an enormous abscess developed on the gluteal region, fragments of a foetal skeleton came away through it, and a sinus was left which was very slow to heal. A second abscess opened in the same region on the opposite side, a third in the hypogastrium, and a fourth in the perineum. Both hip-joints became fixed apparently through muscular spasm. The last fistulous track discharged one of the scapulæ, which took five months in passing through the perineal structures. Being exceedingly tortuous, this fistulous passage remained open for two years. After so many years of suffering the patient was restored to perfect health. This case does not speak volumes in favor of the expectant treatment of extra-uterine pregnancy.

CORROSIVE SUBLIMATE IN THE TREATMENT OF CHRONIC BRIGHT'S DISEASE.—Dr. John C. Peters, of New York, says that in chronic catarrhal or tubal or parenchymatous nephritis milder remedies, like citrate or acetate of potassium, liquor potassæ, etc., may be tried first, aided by buchu. But sooner or later recourse may be had to corrosive sublimate, for which the fluid extract of buchu will prove a good and acceptable vehicle. It is also useful in some cases of cirrhotic or even lardaceous kidney, and there seems no special reason why it should not also be restorative in that most common and most important variety of kidney-disease,—viz.,

chronic diffuse nephritis. Its most obvious effect is an increase in the quantity of urine, which often rises from half a pint to three quarts and more per day, followed by a steady diminution of the dropsy and gratifying relief from all the most urgent symptoms. There will always be a large number of cases of kidney-disease in which no cure is possible, but only palliation and prolongation of life. Hence too much must not be expected, and a hasty rejection or abandonment of a good remedy should not be indulged in. For the kidney is not equally affected throughout all its parts, and the less injured portions may carry on reasonably well the depurative functions. We must conserve what is left of the kidneys. To get the full effect of corrosive sublimate upon the kidneys, salivation must be sedulously guarded against. The dose is one-twentieth to one-eighth of a grain with cinchona.—*Therapeutic Gazette*, December 15, 1886.

MISCELLANY.

THE Thirty-Eighth Annual Session of the Medical Society of the State of Pennsylvania was held at the Bedford Springs Hotel on June 29 and 30, and July 1, 1887. The account of this meeting will be published in our next issue.

DR. WILSON BUCKBY has removed to No. 1744 Diamond Street.

OFFICIAL LIST

OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY FROM JUNE 19, 1887, TO JULY 2, 1887.

- COLONEL CHARLES SUTHERLAND, SURGEON.—Granted one month's leave of absence, with permission to apply for an extension of one month. S. O. 126, Division of the Atlantic, June 23, 1887.
- LIEUTENANT-COLONEL A. K. SMITH, SURGEON.—Will be relieved from duty at West Point, New York, on September 30, 1887, instead of on August 28, 1887. S. O. 144, A. G. O., June 23, 1887.
- MAJOR J. C. MCKEE, SURGEON.—Granted three days' leave. S. O. 149, A. G. O., June 29, 1887.
- MAJOR C. H. ALDEN, SURGEON.—Leave of absence extended to include September 29, 1887. S. O. 144, A. G. O., June 23, 1887.
- MAJOR J. H. BARTHOLOMEW, SURGEON.—Granted leave of absence for two months, to take effect about July 5, 1887. S. O. 141, A. G. O., June 20, 1887.
- CAPTAIN CHARLES RICHARD, ASSISTANT-SURGEON.—Sick-leave extended two months on surgeon's certificate of disability. S. O. 139, A. G. O., June 17, 1887.
- CAPTAIN JOHN J. COCHRAN, ASSISTANT-SURGEON.—Granted leave of absence for one month. S. O. 143, A. G. O., June 22, 1887.
- FIRST-LIEUTENANT WILLIAM N. SUTER, ASSISTANT-SURGEON.—Designated as medical officer for the Rifle Camp at Creedmoor, New York, July 5, 1887. S. O. 124, Division of the Atlantic, June 21, 1887.
- CAPTAIN GEORGE T. BEALL, MEDICAL-STOREKEEPER.—Granted four months' leave of absence. S. O. 150, A. G. O., June 30, 1887.

CAPTAIN A. V. CHERBONNIER, MEDICAL-STOREKEEPER.—Directed to take charge of office and perform duties of acting-assistant-medical-purveyor in St. Louis, Missouri, during absence on leave of Captain George T. Beall, Medical-Storekeeper, now performing those duties. S. O. 150, A. G. O., June 30, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING JULY 2, 1887.

- MEDICAL-INSPECTOR C. J. CLEBORNE.—Ordered for examination preliminary to promotion as Medical-Director.
- PASSED ASSISTANT-SURGEON G. P. LUMSDEN.—Ordered to Receiving-Ship "Franklin," Norfolk, Virginia.
- MEDICAL-DIRECTOR P. J. HORWITZ.—Permission to leave the United States for six months.
- ASSISTANT-SURGEON H. N. T. HARRIS.—Commissioned Assistant-Surgeon in the Navy, June 13, 1887.
- MEDICAL-INSPECTOR J. C. SPEAR.—Detached from Naval Laboratory and granted three months' leave.
- MEDICAL-DIRECTOR DELAVAN BLOODGOOD.—Detached from Naval Hospital, Norfolk, Virginia, and to the Naval Laboratory.
- MEDICAL-INSPECTOR MICHAEL BRADLEY.—Ordered to Naval Hospital, Norfolk, Virginia.
- PASSED ASSISTANT-SURGEON H. G. BEYER.—Remain on present duty until September 1, 1887.
- PASSED ASSISTANT-SURGEON C. G. HERNDON.—Remain on present duty until June 17, 1888.
- PASSED ASSISTANT-SURGEON C. W. DRANE.—Ordered to the Naval Rendezvous, San Francisco, California.
- ASSISTANT-SURGEON H. N. T. HARRIS.—Ordered to the Naval Hospital, Mare Island, California.
- MEDICAL-DIRECTOR A. C. GORGAS.—Remain on present duty until December 31, 1887.
- MEDICAL-INSPECTOR C. J. CLEBORNE.—Remain on present duty until December 31, 1887.
- SURGEON BENJAMIN F. MACKAY.—Remain on present duty until December 31, 1887.
- MEDICAL-DIRECTOR J. MILLS BROWNE.—Will remain on present duty as member of Retiring Board until June 30, 1888.
- MEDICAL-DIRECTOR RICHARD C. DEAN.—Will remain on present duty as member of Retiring Board until June 30, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING JULY 2, 1887.

- GUIÉRAS, JOHN, PASSED ASSISTANT-SURGEON.—Detailed for temporary duty at Key West, Florida, June 23, 1887.
- WASDIN, EUGENE, PASSED ASSISTANT-SURGEON.—Relieved from duty at Marine Hospital, New York; ordered to Marine Hospital, Chicago, Illinois, June 23, 1887.
- NORMAN, SEATON, ASSISTANT-SURGEON.—To proceed to Charleston, South Carolina, for temporary duty, June 23, 1887.
- HEATH, F. C., ASSISTANT-SURGEON.—Relieved from duty at Chicago, Illinois, June 23, 1887.
- ARMSTRONG, S. T., PASSED ASSISTANT-SURGEON.—Relieved from duty at Marine Hospital, Memphis, Tennessee; ordered to Marine Hospital, New York, June 27, 1887.
- PECKHAM, C. T., PASSED ASSISTANT-SURGEON.—Relieved from duty at Marine Hospital, Wilmington, North Carolina; ordered to Marine Hospital, Memphis, Tennessee, June 27, 1887.
- GLENNAN, A. H., PASSED ASSISTANT-SURGEON.—Ordered to Revenue Cutter "Crawford" for temporary duty, June 30, 1887.
- BROOKS, S. D., ASSISTANT-SURGEON.—Ordered to examination for promotion, June 27, 1887; relieved from duty at Evansville, Indiana; ordered to Marine Hospital at Wilmington, North Carolina, June 27, 1887.